US Army Corps
of Engineers
HUNTSVILLE DIVISION

FINAL

Defense Environmental Restoration Program
for
Formerly Used Defense Sites

Ordnance and Explosive Waste
Chemical Warfare Materials

ARCHIVES SEARCH REPORT FINDINGS

CHOPAWAMSIC TROOP TRAINING SITE

Prince William County, Virginia

Project Number C03VA019402

OCTOBER 1996

~~MARCH 1995~~

Prepared by
US ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
for the former
CHOPAWAMSIC TROOP TRAINING SITE
Prince William County, Virginia
Project Number C03VA019402

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1.0 Introduction

1.1 Authority

In 1986, Congress established the Defense Environmental Restoration Program at 10 U.S.C. 2701 et.seq. This program directed the Secretary of Defense to "carry out a program of environmental restoration at facilities under the jurisdiction of the Secretary."

In March, 1990, the EPA issued a revised National Contingency Plan. Under 40 C.F.R. 300.120, EPA designated DOD to be the removal response authority for incidents involving DoD military weapons and munitions under the jurisdiction, custody and control of DoD.

Since the beginning of this program, the U.S. Army Corps of Engineers has been the agency responsible for environmental restoration at Formerly-Used Defense Sites (FUDS). Since 1990, the U.S. Army Engineering and Support Center, Huntsville, has been the Mandatory Center of Expertise and Design Center for Ordnance and Explosives.

2.0 Previous Site Investigations

2.1 Findings and Determination of Eligibility

Under the Defense Environmental Restoration Program (DERP), the Norfolk District prepared a Findings and Determination of Eligibility (FDE), for the subject Chopwamsic Troop Training Site. The FDE indicates that the site, consisting of 11,011.23 acres, was acquired by the Army in 1942 by use permit and condemnation. The entire site was placed in the custody of the National Park Service in 1948. The report determined that the site was eligible for the Defense Environmental Restoration Program for Formerly Used Defense Sites.

Completion of the Risk Assessment Code (RAC) Procedures form resulted in a RAC of 3 for the site. However, the Norfolk District presented a justification to reduce their proposed OEW project to a RAC of 4. A copy of the above listed FDEs are included at Appendix C.

2.2 *Prince William Forest Park, An Administrative History*

This document, written in 1986 by Susan Cary Strickland of the History Division, National Park Service, Department of the Interior, Washington, D.C., provides a detailed account of the Park's development. Included is information on the military occupation of the Park, cooperation with the OSS, site selection, early development and growth. The major emphasis is on the political impacts of the original development, and government land acquisition, funding, community relations, and management are detailed.

3.0 Site and Site Area Description

3.1 Location

The former Chopawamsic Troop Training Site is located approximately 35 miles south of Washington D.C., in Prince William County, Virginia. Now referred to as Prince William Forest Park, the site is roughly bounded by Route 619 on the south and west, Route 234 to the north, and Interstate 95 to the east.

3.2 Past Uses

Prior to U.S. Government acquisition, the land was used for agricultural and mining operations. The Army utilized the site for the training counter intelligence agents for the OSS. Improvements by the Army included personnel and maintenance support facilities, several ranges, and two magazines.

3.3 Current Uses

The site currently constitutes the major portion of the Prince William Forest Park which serves as picnic and camping grounds as well as a national forest reserve.

3.4 Demographics of the Area

3.4.1 Center of Activity

Chopawamsic Training Annex is located in Prince William County, Virginia. This community has numerous centers of activity such as the Center for the Arts, Historic Prince William, Inc., Manassas Art Guild, and the Prince William Symphony Orchestra, and various parks located throughout the community. Information comes from both phone conversations and Prince William County demographic fact sheet.

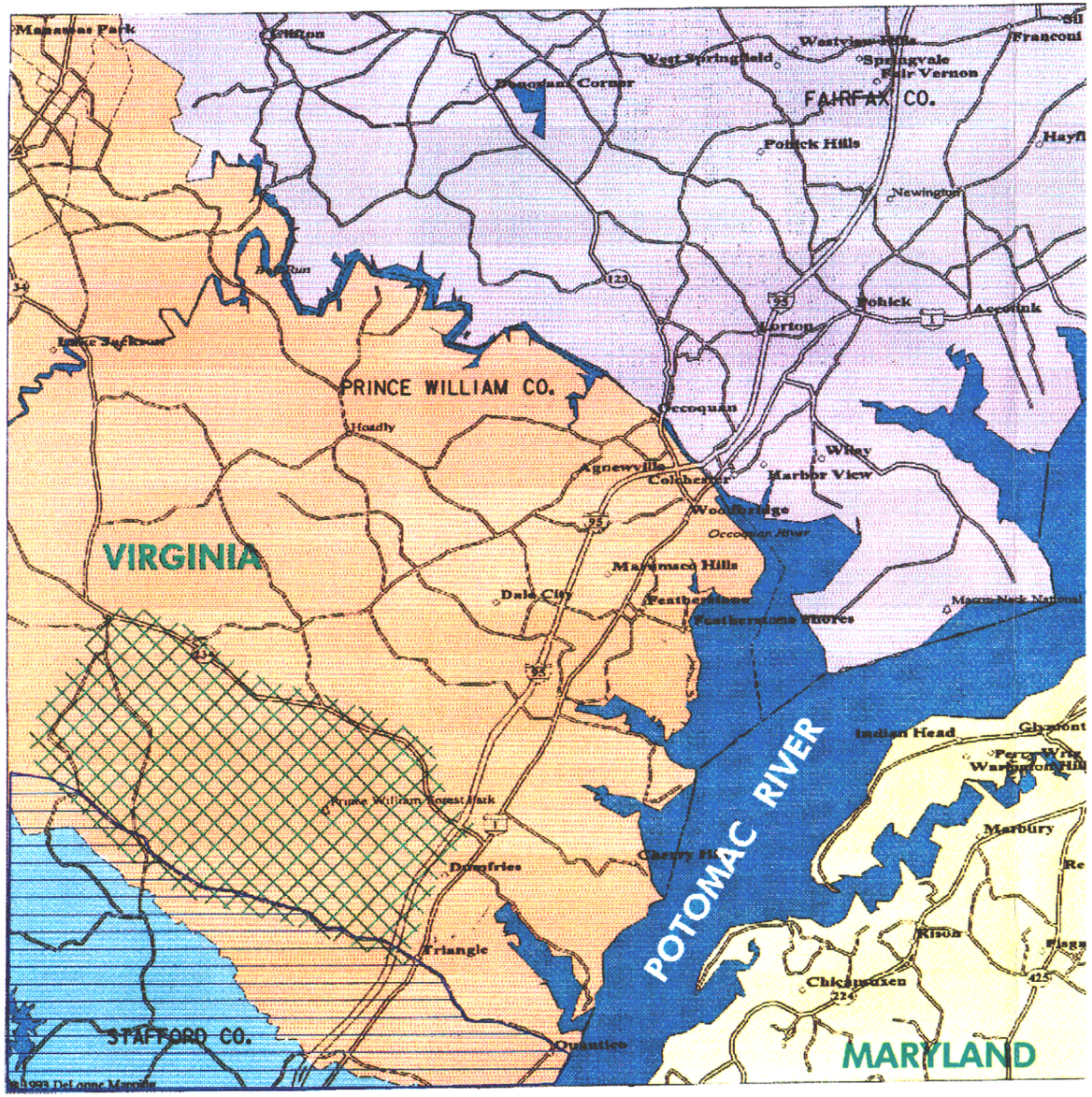
3.4.2 Population Density

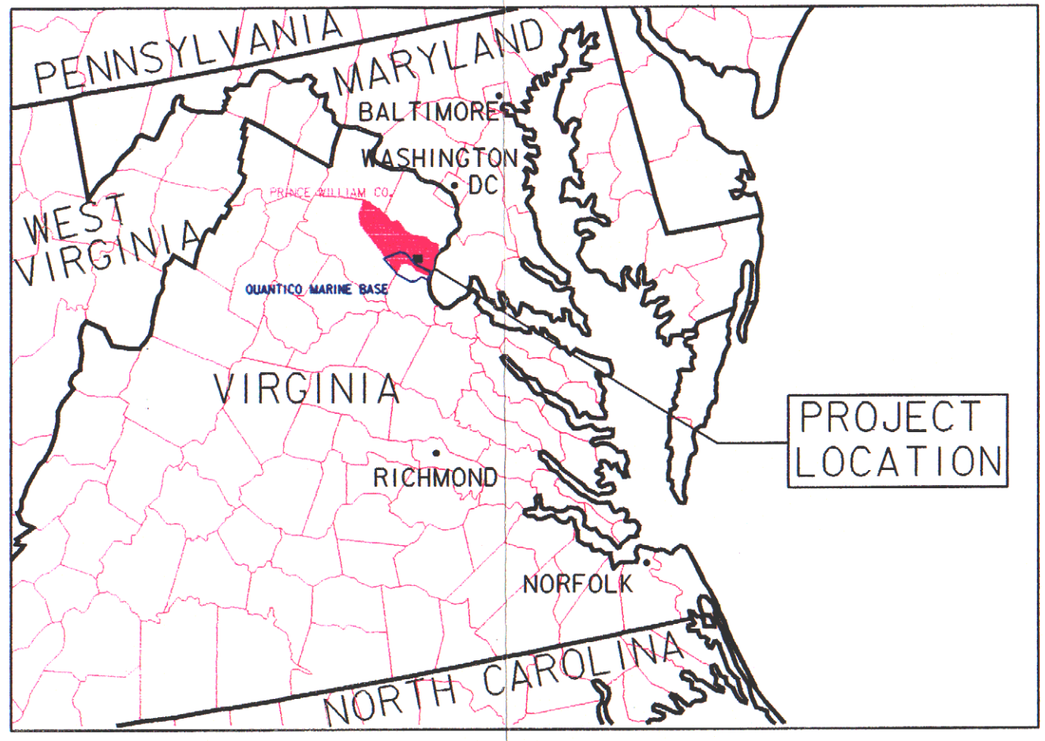
County:	Prince William
Area:	348 sq.mi.
POP:	243,559
PD:	699.9 persons per sq.mi.

Population and area are based on the U.S. Department of Commerce, Bureau of the Census, 1990 statistics, and telephone interviews.

3.4.3 Business and Industry Profile

A review of both telephone interviews and County Business Patterns (1990) assisted in developing a business profile of the area. The County of Prince William is diversified. The





LEGEND

- Population Center
- State Route
- Geo Feature
- Town, Small City
- Park
- Interstate, Turnpike
- US Highway
- County Boundary
- Major Street/Road
- State Route
- Interstate Highway
- US Highway
- Open Water
- SITE AREA
- QUANTICO MARINE BASE

2 Miles

5 KM

N

NOT TO SCALE

FIGURE 3.1

CHOPAWAMSIC TROOP TRAINING SITE
PRINCE WILLIAM COUNTY, VIRGINIA
DERP FUDS # C03VA019402
VICINITY MAP

PROJ. DATE: MAR. 1995	DATE OF MAP: 1993
23-MAR-1995 15:39	/N/OEW95AB/G4/MAP/CHOPVIC.DGN, H20,CHOPVIC.CIT

LEGEND:

RESERVATION BOUNDARY

**NOTE: U.S. ROUTE 95 HAS BEEN ADDED TO SHOW ITS APPROXIMATE PRESENT DAY LOCATION.

N

NOT TO SCALE

FIGURE 3.2

CHOPAWAMSIC TROOP TRAINING SITE
PRINCE WILLIAM COUNTY, VA
DERP FUDS # C03VA019402
SITE MAP

PROJ. DATE: MAR 1995	DATE OF MAP: 1943
23-MAR-1995 13:16	N/OEW95AB/G4/MAP/CHOPAMAP.DGN - CHOPAMAP.CIT

largest employers are: Atlantic Research Corporation, AT&T, IBM Corp., Prince William County Schools, and Quantico Marine Corp Base. The community supports retail, service, and light industries.

3.4.4 Type of Housing

Housing in Prince William County is composed of both single and multi-family homes.

3.4.5 New Development in the Area

Development in the Prince William County area includes residential dwellings, industrial, and commercial development.

3.4.6 Typical Cross-Section of Population

The ancestry in Prince William County is diverse. Approximately 83.0% of the population is white, 12.0% Black, 4.5% Hispanic, 0.5% other races. The percent of those under the age of 18 is 31.0%, over 65 years is 3.0%. The median age is 29. There are approximately 84,100 housing units with a median value of $138,500. The work force, based on the number of establishments in Prince William County is broken down into the following: manufacturing, 4.0%; agriculture, 1.1%; services, 30.0%; trade and finance, 37.4%; other,27.5%.

4.0 Physical Characteristics of the Site

4.1 Geology\Physiography

The Chopawamsic Training Site is located in the Piedmont Upland section of the Piedmont physiographic province. The topography of the Piedmont physiographic province consists of low well-rounded hills and long, northeast-trending valleys and ridges. The surfaces of many ridge tops and interstream divides are relatively flat. Recent erosion by streams has dissected the Piedmont and created a local topographic relief of 100 to 200 ft between drainage divides and stream bottoms. Land surface in the Piedmont ranges from 300 to 600 ft above sea level along the eastern border near the Fall Line to more than 1500 ft near the escarpment of the Blue Ridge. The Upland section is considered representative of the Harrisburg peneplain. Erosional modification of this erosion surface has been on the whole rather moderate. Dissection is least at the western margin and increases along streams toward the Fall Line. Numerous monadnocks are present along the western margin of the section (Thornbury 1965).

4.2 Soils

The soils of the Chopawamsic site are composed mainly of silty sandy clay that becomes gradually more clayey and gravelly in the substratum. Slopes in this area range from 0% to 50%. The soils are all deep (over 60 inches) except for a few areas of severe slope where the soil is only moderately deep (48 inches). Generally, the surface layer is thin, dark brown, and composed of silty sandy clay. The subsoil is brownish yellow or strong brown, silty sandy clay. Gravel or sand is present in the lower part of the subsoil. The substratum is composed of multicolored sand or reddish yellowish and brownish gravelly sandy silty clay.

The permeability of the soil is for the most part is moderate, as well as the available water capacity. The surface runoff is dependent on the slope and in some areas is very rapid. The seasonal high water table is at the most within 12 inches of the surface and usually levels out between 36 and 60 inches below the surface (Elder 1989).

4.3 Hydrology

4.3.1 Surface Water

The Chopawamsic Troop Training Site is located southwest of Washington, DC near the Quantico Marine Corps Base in Prince William County, Virginia. It is drained primarily by Quantico Creek and Chopawamsic Creek and several of their small tributaries but insufficient gage readings are available.

4.3.2 Groundwater

The Piedmont physiographic province is underlain by igneous, metamorphic, and sedimentary bedrock ranging in age from Precambrian to Mesozoic. Bedrock includes massive granites and gneisses, foliated phyllites and schists, and consolidated sandstones. Metamorphic rocks predominate the crystalline rock regimes. In most places, the consolidated rocks are overlain by regolith. Porosity of the regolith is about 35 to 55% near land surface but decreases with depth as the degree of weathering decreases. Porosity of the bedrock is only .01 to 2%. Because of the relatively high porosity and permeability of the regolith, recharge from precipitation is stored in the regolith and later reaches the underlying rocks through fractures. The abundance of connected fractures within the bedrock directly affects the yield of wells in the Piedmont physiographic province. Because fractures act as conduits for the flow of ground-water, well yields are greatest where wells intersect large or numerous fractures. Because the number and size of fractures decreases with depth in the Piedmont rocks, most wells within the Piedmont are less than 800 ft deep. Wells in crystalline rocks of the Piedmont commonly produce 5 to 35 gal/min and some yield as much as 1800 gal/min (Swain and others 1991).

4.4 Weather

This site near Washington, DC lies at the western edge of the mid Atlantic Coastal Plain, about 50 miles east of the Blue Ridge Mountains and 35 miles west of Chesapeake Bay. The area is characterized by warm and humid summers, and winters are cold, but not severe. Periods of pleasant weather often occur in the spring and fall. The summertime temperature is in the upper 80s and the winter is in the upper 20s. The average date of the last freezing temperature in the spring is April 1 and the average date for the first freezing temperature in the fall is November 10. Precipitation is rather uniformly distributed throughout the year. Thunderstorms can occur at any time of the year but are most frequent during the late spring and summer. The storms are most often accompanied by downpours and gusty winds but severe weather such as tornadoes and hailstorms are possible but infrequent. Tropical storms can also hit this area with heavy rain, high winds, and flooding, but extensive damage is also rare. The average winter snowfall is about 18 inches per year.

The prevailing wind direction is from the south, but occasional severe winter storms will produce strong northwesterly winds.

Relative humidity is close to 75 percent during the early hours of the day and drops to around 50 percent late in the afternoon.

In Washington, DC the sun shines for about 50 percent of the daylight hours in winter, and for more than 60 percent in summer. Skies are clear more than 25 percent of the time, partly cloudy about 30 per cent, and cloudy about 45 percent.

Climatological data for the area are summarized in TABLE 4-1. Data were collected at the National Weather Service meteorological station at the Washington, DC National Airport. The site is located about 25 miles southwest of the National Airport.

CLIMATOLOGICAL DATA FOR WASHINGTON, DC NATIONAL AIRPORT
TABLE 4-1

Month	Temperature		Precipitation	Wind	
	Average Minimum (°F)	Average Maximum (°F)	Average (Inches)	Average Speed Miles/Hour	Average Direction
January	26.8	42.3	2.72	10.0	NW
February	29.1	45.9	2.71	10.4	S
March	37.7	56.5	3.17	10.9	NW
April	46.4	66.7	2.71	10.5	S
May	56.6	76.2	3.66	9.3	S
June	66.5	84.7	3.38	8.9	S
July	71.4	88.5	3.80	8.3	S
August	70.0	86.9	3.91	8.1	S
September	62.5	80.1	3.31	8.4	S
October	50.3	69.1	3.02	8.7	SSW
November	41.1	58.3	3.12	9.3	S
December	31.7	47.0	3.12	9.6	NW
Average	49.2	66.9	38.63	9.4	S

4.5 Ecology

The information on the endangered and threatened species for this site has been provided by the U.S. Fish and Wildlife Service (USFWS) and the Virginia Department of Conservation and Recreation, Division of Natural Heritage (VDC-NH).

The USFWS indicated that the following Federally protected species may be found in Prince William County, Virginia: Bald eagle (Haliaeetus leucocephalus), endangered; Henslow's sparrow (Ammodramus henslowii), candidate; brook floater (Alasmidonta varicosa), candidate; yellow lance (Elliptio lanceolata), candidate; regal fritillary (Speyeria idalia), candidate; and small whorled pogonia (Isotria medoloides), threatened.

The VDC-NH reported that the State endangered small whorled pogonia occur in the vicinity of the Chopawamsic Troop Training Site. The following State threatened and endangered species were reported to occur in Prince William County: Bald eagle, endangered; brook floater, endangered; and regal fritillary, candidate.

No additional information on the occurrence of rare or endangered species or natural communities is known at this time. This does not mean that other state or federally-listed species may not be present within the areas of interest. An on site inspection by appropriate state and federal personnel may be necessary to verify the presence, absence, or location of listed species, or natural communities if remedial action is recommended as part of the final ASR.

5.0 Real Estate

5.1 Present Ownership

The Findings and Determinations of Eligibility (FDEs), cited in Paragraph 2.0, indicates that the permitted use lands of the former Chopawamsic Troop Training Site and those acquired through condemnation proceedings were placed in the custody of the NPS by 1948. The site remains under NPS control.

5.2 Confirmed DOD Ownership

Based on data contained in the FDE, the Army acquired permit use of 9,870 acres from the Department of Interior and 1,141.23 acres in fee, by condemnation in 1942.

5.3 Historically Significant Past Ownership

There is nothing in the records to indicate that there were any historically significant past ownerships, other than DOD's, with respect to possible OEW.

6.0 OEW/CWM Site Analysis

6.1 Historical Summary of OEW/CWM Activities

In 1933, the Resettlement Administration, under the authority of the National Industrial Recovery Act, acquired 17,000 acres of depleted farmland in Prince William County, Virginia, and established the Chopawamsic Recreation Demonstration Area (RDA). In 1936, the area was transferred by Executive Order to the Department of the Interior for administration. In 1940 congress directed that the area be administered as a part of the National Capital Park system. A major stated purpose of the park was to provide recreational opportunities for residents of and visitors to the Washington metropolitan area (Jones 1981).

In 1934, the Civilian Conservation Corps (CCC) began the construction of the cabin camps, roads, lakes, trails, and utility systems. Some local labor was also used. The first camp was completed and in operation by 1935. By 1940, when the area was officially transferred to the national park system, five cabin camps had been completed, each accommodating 150 campers. Other facilities included three CCC camps, a temporary office, a makeshift maintenance area, and five lakes (National Park Service 1992).

With the beginning of World War II, the defense needs of the nation eventually superseded the recreational needs of the public. As early as 1938, military maneuvers had been conducted in the park by forces from Quantico Marine Base and Fort Belvoir. By 1942 the practice of military maneuvers had become commonplace. During World War II, parts of the park were utilized for military training purposes, and 4,862 acres of land south of Virginia State Route 619 are still under special use permit to the Department of the Navy for Marine training purposes.

In 1942, a special use permit was also granted allowing exclusive use of all five cabin camps in the park by the War Department (Strickland 1986). From 1942 to 1945, Chopawamsic RDA was closed and was used by the U.S. Army's Office of Strategic Services (OSS), the forerunner of the CIA. Chopawamsic RDA became a school for the training of agents in the art of espionage (Christner 1995).

The OSS staff ran both basic and advanced training at the same time in different sections of Chopawamsic, known as Areas A and C. Cabin units in each area were designated numerically. Paramilitary training included the use of pistols, revolvers, carbines, rifles, sub-machine guns, mortar guns, mortars, rockets, grenades, military demolition and explosives. An assortment of OSS sabotage and "booby-trap" devices (incendiary, demolition and contact firing types) were also probably used (Brunner 1994). Besides paramilitary training, Area C was also used for cryptic training (D'Anne Evans 1989, Strickland 1986).

"Live fire" ranges were established for each type of weapon system. Danger areas created included 10 target ranges and 3 demolition areas. Demolition areas covered 4 acres on old

Route 643, 1 acre on Route 620 (North of Route 626 intersection) and 20 acres on Route 626 and Route 619. Magazines and other storage facilities for munitions were also constructed at Chopawamsic RDA.

Shortly after World War II, in 1946, the special use permit for Chopawamsic RDA by the War Department was terminated. A restoration survey had been conducted by the U.S. Army Corps of Engineers listing improvements to the property by the War Department and/or damages resulting from War Department occupancy (United States Engineer Office 1945). The list includes the following designated areas and usage:

> Area A---storage magazine surrounded by stockade fence, a 200-yard rifle range and three demolition areas (1 acre, 4 acres and 20 acres).
>
> Area/Camp A-2----pistol range building (40 ft. by 60 ft.).
>
> Tract Numbered 229----two magazines (24 ft. by 42 ft.)
>
> Property believed to be National Park Service land, but may lie partly on Tracts Numbered 224 and 230----200-yard rifle range.
>
> Tract Numbered 256----one acre demolition area.
>
> Tract Numbered 208----four acre demolition area (effects may have extended to Tract Numbered 213 owned by War Department).
>
> Tract Numbered 201----twenty acre demolition area.
>
> Camp A-4----target rifle range (1500 cubic yards grading and wood shelters).
>
> Camp C-4----6 target rifle range (100 cubic yards excavation and shelters).
>
> Camp C-4----8 target pistol range (1,000 cubic yards excavation and shelters).

Included in the restoration survey document is a letter from Headquarters, Det # 6, 9800th TSU-CE, Bomb and Shell Disposal Team, Chopawamsic, VA, dated 13 January 1946, Subject: Clearance of Range Land in Chopawamsic Park, other areas are vaguely listed for the Chopawamsic RDA. Reference is made to a map, which was not attached to the report. These areas are listed as follows:

> Mortar and Rocket Range (40.5 - 73.8), approximately 8 acres (letter reference), 20 acres (map indication).
>
> Mortar Range (44.6 - 72.0), approximately 3 acres (letter reference), 1 acre (map indication).

Mortar Range (44.7 - 74.6), approximately 1 acre, 4 acres (map indication).

3 Abandoned Houses----practice booby-trapping

Magazine Area

Hand-grenade Court

Further investigation revealed that these ranges/explosive areas concide with the previously listed areas

Remediation and restoration measures were taken in 1946 and 1947. The name of Chopawamsic RDA was then changed to Prince William Forest Park.

At the end of World War II, Chopawamsic RDA, now Prince William Forest Park, was supposedly cleared of unexploded ordnance. However, as recently as 1993, the 57th EOD at Ft. Belvoir, VA, reported an incident involving a bazooka round. Earlier in 1985, a mortar shell was found embedded in the roof of a building and removed.

Besides the discovery of ordnance, an ongoing administrative problem for Prince William Forest Park since World War II has been the issue of 4,862 acres of land on loan to the Quantico Marine Corps Base. Both the Marine Corps and the National Park Service believe they have valid claim to the 4,862 acres.

6.2 Records Review

National Archives and Records Administration
Suitland Branch
4205 Suitland Road
Suitland, MD 20409

Post war correspondence on restoration of the site was obtained from Accession Number 77-A52-259, Box 18.

National Archives
8th and Pennsylvania
Washington, D.C. 20408

Information obtained from textual sources: "OSS Weapons" by John W. Brunner, Ph.D., and "History of the Schools & Training Branch, Office of Strategic Services" edited by William L. Cassidy.

Archives II
8601 Adelphi Road
College Park, MD 20740-6001

Historical Maps (including post war time period) of Chopawamsic Troop Training Area were retrieved from the Cartographic Division.

Chemical and Biological Defense Agency Historical Office
AMSCB-CIH
Aberdeen Proving Ground
Edgewood, MD 21010

Files reviewed did not contain pertinent information.

National Personnel Records Center
9700 Page Blvd
St. Louis, MO 63132

All files under accession numbers reviewed yielded no pertinent information.

U.S. Army Chemical School
Fisher Library, Sibert Hall
Ft. McClellan, AL 36205-5020

Files searched by librarian revealed no pertinent information.

National Archives-Mid Atlantic Region
9th & Market Streets
Philadelphia, PA 19107

Information obtained from RG 79 (Records of the National Park Service) pertained to the land acquisition of the site (including maps) and some local correspondence. Information obtained from RG 270 (Records of the War Assets Administration) pertained to real estate information of the site, including a list of improvements to the property by the War Department and/or damages resulting from War Department occupancy with estimated cost of restoration.

Federal Records Center
5000 Wissahickon Ave
Philadelphia, PA 19144

Files under accession numbers did not reveal any pertinent information.

Library of Virginia
11th Street at Capitol Square
Richmond, VA 23219-3491

A newspaper clipping on the site was obtained from the Richmond Times-Dispatch.

Archives
Marine Corps Research Center
Quantico Corps University
Marine Corps Combat Development Command
2040 Broadway Street
Quantico, VA 22134-5107

Materials obtained included 1937 revised map of the area encompassing the Chopawamsic Troop Training Site depicting impact areas, training areas and ranges. Historical information on the history of the Quantico Marine Corps Base was also found.

Soil Conservation Service
9263 Corporate Circle
Manassas, VA 22110

Copy of Soil Survey of Prince William County, Virginia (including maps) was obtained.

Archives
Judicial Circuit Court
Prince William County Court House
9311 Lee Avenue
Manassas, VA 22110

Aerials were reviewed. No copies were obtained.

Office of Mapping & Information Resources
Prince William County
4379 Ridgewood Center Drive, Suite 201
Prince William, VA 22192-5308

Maps and aerials were reviewed. No copies were obtained.

Office of Planning and Zoning
Prince William County
1 County Complex Court
Prince William, VA 22192-9201

Materials obtained included newspaper clippings; "Draft General Management Plan, Environmental Assessment, Prince William Forest Park, VA"; extracts from "Prince William

County: A Pictorial History" by D'Anne Evans and "Prince William: A Past to Preserve" by the Prince William County Historical Commission, "The Curtis Collection: A Personal View of Prince William County History"; and an page from a survey file by the Virginia Historical Landmarks Commission.

Bull Run Regional Library
8051 Ashton Avenue
Manassas, VA 22110

Information was obtained from pertinent pages of the publication entitled "Prince William Forest Park: An Administrative History" by Susan Cary Strickland and "the Hinterland: An Overview of the Prehistory and History of Prince William Forest Park, Virginia" by the National Park Service.

Cultural Resource Management Interpretation & Visitor Center
Prince William Forest Park
P.O. Box 209
Triangle, VA 22172

An historical map of the site and a copy of the publication entitled "Prince William Forest Park: An Administrative History" by Susan Cary Strickland was obtained.

6.3 Interpretation of Aerial Photography

6.3.1 Interpretation of Aerial Photography

Photographic analysis and land use interpretation were performed using the following photographic sources:

Photo Date	Approx. Scale	Source	Frame ID #
30 Mar 1943	1"=1,750	NATIONAL ARCHIVES	06 thru 12 51 thru 55 143 thru 147
12 Mar 1950	1"=2,000'	NATIONAL ARCHIVES	249 thru 254 266 thru 270
08 Dec 1953	1"=1,667'	ASCS	82 thru 87 127 thru 132
09 Apr 1954	1"=1,667'	ASCS	196 thru 200

Photo Date	Approx. Scale	Source	Frame ID #
09 Jun 1962	1"=1,667'	ASCS	79 thru 85 146 thru 151
10 Jul 1962	1"=1,667'	ASCS	35 thru 41
29 Mar 1963	1"=2,000'	USGS	86 thru 90 98 thru 102
30 Jun 1969	1"=1,667'	ASCS	32 thru 34 36 thru 40 48 thru 51
02 Dec 1971	1"=2,000'	USGS	19 thru 24 33 thru 38 45 thru 50

Two USGS topographic quadrangles were used to reference the photography, they are as follows:

Joplin (photorevised 1971)
Quantico (photorevised 1983)

Photography prior to 1943 was not available for interpretation. The photography from 1943, 1950, and 1954 does not reveal any land disturbances in any of the suspected site areas. Buildings were located in the site areas. These findings appear to be consistant considering the period of use.

1962 photography was analyzed, and buildings in the site areas are still evident in the photography. The rest of the photography was scanned, and no other areas of interest were evident.

Photography from 1963, 1969 and 1971 did not reveal anything different from the 1962 photos with respect to possible OEW indications.

6.3.2 Map Analysis

Map analysis was performed using the following 7.5' USGS quadrangles:

Joplin (photorevised 1971)
Quantico (photorevised 1983)

Both quadrangles contain both planimetric and topographic features. The terrain is fairly rugged and is covered with dense woods. There are many streams both perennial and intermittent in the area. Planimetrically there are many hard and loose surface roads. There are many areas of human habitation. The site area lies within the boundaries of Prince William Forest Park. There are mainly dense woods and a few small roads within this area.

6.4 Interviews

Interviews were conducted by telephone and in person, both prior to and during the site inspection. The primary purpose of these interviews was to make initial contact with individuals knowledgeable of the site and to coordinate follow-up visits during the site inspection phase of this ASR's preparation. A list of persons interviewed is included at Appendix E. Any pertinent information derived from these discussions is covered within the context of this report.

6.5 Site Inspection

The subject site inspection was performed by the following St. Louis District personnel:

Dennis W. Gilmore	Project Manager
Gregg Kocher	Safety Specialist
M. Kevin McCaffrey	QASAS

The site, which is currently a national forest, is tree covered and decades of accumulated organic matter covers the ground.

The team, accompanied by Mike Shafer, National Park Service Ranger, inspected various ranges within the former training site. The former facility included two small arms ranges, four demolition ranges, a mortar range, and a multi-use assault range (Figure 7.1).

Of the eight areas, OEW was observed in two. At the five target, 50 yard pistol range several expended .45 caliber rounds were found embedded in each of the target posts. This range was also used for carbine and sub-machine gun firing.

The multi-use assault range is the site of a 1993 recovery of a 2.36" rocket. During the site inspection we discovered two concrete targets (one with a 20mm gun barrel). Additionally, we found a portion of a 2.36". This site is located in what is believed to be a cemetery. No indications of OEW was found in either of the other areas inspected.

Based on interviews and our research in the local area, it is concluded that OEW contamination of the site exists. However, because of the limited use and nature of the training conducted, it is believed that the scale of contamination would be relatively small. This is based on the number of personnel trained and the short period during which the site operated.

7.0 Evaluation of Ordnance Contamination

Based on the extensive archive searches performed, the interviews with National Park Service personnel, and the results of the site investigation, there exists the probability of OEW contamination at the site based on observed OEW and previous recoveries of ordnance. Due to the nature and small scale of the training, the OEW contamination is thought to be localized and in limited quantities.

As noted in Section 6.5 - Site Inspection, of the eight areas identified as potentially contaminated, OEW was observed in two. At the 50 yard small arms range, several expended .45 cal rounds were found embedded in each of the target posts. This range was also used for carbine and sub-machine gun firing.

The multi-use assault range is the site of a 1993 2.36" rocket recovery. This item was found by a Park Ranger while cleaning a family homestead burial plot. No cultural significance related to the cemetery was found, though the Ranger suspects it dates to the turn of the century.

During the site inspection, two trapezoidal concrete targets (one with a 20mm gun barrel) were discovered. The continued survey of the site revealed a portion of a 2.36" rocket body. This site is located in what is reported above to be a cemetery.

No indications or observations of OEW was found in either of the other areas inspected. The ability to visually located items was severely hamper by the natural environment. The site is tree covered and decades of accumulated organic matter covers the ground.

The site inspection confirmed the contamination of the site with OEW. No OEW of a hazardous nature was observed during the site inspection. However, there exists a good probability that of additional OEW. Therefore, a RAC score of 3 has been derived, indicating that further action be taken.

APPENDIX A

REFERENCES

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
for the former
CHOPAWAMSIC TROOP TRAINING SITE
Prince William County, Virginia
Project Number C03VA019402

APPENDIX A -- REFERENCES

A.1 REFERENCES

Brunner, John W.
1994 Book, OSS Weapons, dated 1994, by John W. Brunner, Ph.D., Phillips Publications, Williamstown, NJ.

Christner, Henry
1995 Article, "Public Park, Private Past", dated 29 January 1995, Staff Writer-Henry Christner, Richmond Times-Dispatch, Richmond, Virginia.

Evans, D'Anne
1989 Pamphlet, Prince William County: A Pictorial History, dated 1989 by D'Anne Evans, The Donning Company Publishers, Norfolk/Virginia Beach, Virginia.

Jones, Francis
1981 Attachment to Survey Form 76-299, Virginia Historical Landmarks Commission Survey, dated April 1981, performed by John Francis, Architectural Historian/Surveyor, for the Office of Planning and Zoning, Prince William Forest Park, Virginia.

National Park Service
1992 Pamphlet, Draft General Management Plan, Environmental Assessment, Prince William Forest Park, Virginia, dated December 1992, sponsored by National Park Service, Department of the Interior, for the Office of Planning and Zoning, Prince William Forest Park, Virginia.

Strickland, Susan Cary
1986 Pamphlet, Prince William Forest Park: An Administrative History, dated January 1986, History Division, National Park Service, Department of Interior, Washington, D.C.

U.S. Army Corps of Engineers (ACOE)

1993 Letter with enclosures, dated 12 January 1993, from Commander, North Atlantic Division, Corps of Engineers, to Commander Department of the Army Headquarters, U.S. Army Corps of Engineers, Attention: CEMP-R, Washington D.C., and Commander, Huntsville Division, Attention: CEHND-DE, Huntsville, AL, Subject: Inventory Project Report for Site No. C03VA019400, Chopawamsic Troop Training Site, Prince William County, Virginia.

United States Engineer Office

1945 Restoration Survey (Form SPB-5), Chopawamsic Training Center, Quantico, VA, dated 7 December 1945, Washington, D.C., Accession 77-A52-259, Box 18, Washington National Records Center, Suitland, MD.

A.2 REFERENCES FOR GEOLOGY AND SOILS

Elder, John H.

1989 *Soil Survey of Prince William County, Virginia*. US Department of Agriculture, Soil Conservation Service, in cooperation with Virginia Polytechnic Institute and State University.

Swain, Lindsay A., Hollyday, Este F., Daniel, Charles C. III, and Mesko, Thomas O.

1991 *An Overview of the Appalachian Valleys-Piedmont Regional Aquifer-System Analysis*. Aquifers of the Southern and Eastern States, Regional Aquifer Systems of the United States, AWRA Monograph Series No. 17.

Thornbury, William D.

1965 *Regional Geomorphology of the United States*. Department of Geology, Indiana University, John Wiley and Sons, Inc., New York.

A.3 DEMOGRAPHIC REFERENCES

Prince William County Chamber of Commerce (703) 590-5000

Office of Mapping and Information Resources (703) 792-6840

U.S. Department of Commerce. Bureau of the Census. Virginia. 1990.

APPENDIX B

ACRONYMS

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
for the former
CHOPAWAMSIC TROOP TRAINING SITE
Prince William County, Virginia
Project Number C03VA019402

APPENDIX B – ACRONYMS

AAF	Army Airfield
ASR	Archives Search Report
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CEHND	Corps of Engineers, Huntsville Division
CCC	Civilian Conservation Corps
CIA	Central Intelligence Agency
CSM	Chemical Surety Material
CWM	Chemical Warfare Material
DERA	Defense Environmental Restoration Account
DERP	Defense Environmental Restoration Program
DOD	Department of Defense
EOD	Explosives Ordnance Disposal
EPA	Environmental Protection Agency
ERDA	Environmental Restoration Defense Account
FDE	Findings and Determination of Eligibility
FDIC	Federal Deposit Insurance Corporation
FUDS	Formerly Used Defense Sites
FWS	U. S. Fish and Wildlife
GSA	General Services Administration
HTW	Hazardous and Toxic Waste
INPR	Inventory Project Report
IRP	Installation Restoration Program
MCX	Mandatory Center of Expertise
NPS	National Park Service
NCP	National Contingency Plan
OEW	Ordnance and Explosive Waste
OSS	Office of Strategic Services
PWFP	Prince William Forest Park
RDA	Recreational Demonstration Area
SARA	Superfund Amendments and Reauthorization Act
TSU-CE	Technical Service Unit-Corps of Engineers
USACE	U.S. Army Corps of Engineers
USAED	U.S. Army Engineer District
USAEDH	U.S. Army Engineer Division, Huntsville, AL
UXO	Unexploded Ordnance
WRNC	Washington National Records Center

APPENDIX C

REPORTS, STUDIES, LETTERS, MEMORANDUMS

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
for the former
CHOPAWAMSIC TROOP TRAINING SITE
Prince William County, Virginia
Project Number C03VA019402

APPENDIX C

REPORTS/STUDIES/LETTERS/MEMORANDUMS

APPENDIX C-1
Site Specific Safety and Health Plan (SSHP)

SITE SPECIFIC SAFETY AND HEALTH PLAN (SSHP)
OEW/CWM Archives Search Site Inspection Visit
Chopawamsic Troop Training Site
Chopawamsic, VA
Site #C03VA0194

1. REFERENCES:

a. Safety Manual, CELMS-PM-M, 16 Sep 93 w/ Ch1.

b. SOP for Reporting Ordnance and Unexploded Ordnance (UXO), CELMS-PM-M, 19 Jan 95.

c. OEW Guidance Regarding Coordination with EOD Organizations, 10 Jan 95.

2. GENERAL: This plan prescribes the safety and health requirements for team activities and operations conducted to determine the presence of ordnance and explosive waste and /or chemical warfare materials at the specified site.

a. The Safety Officer has final authority on all matters relating to safety. The safety rules will be followed at all times. Any member of the team may stop operations if they observe a situation or activity which poses a potential hazard to any individual or to the operation. All actions must comply with the common sense rule!

b. All team members will be aware of the local emergency numbers and the location of the nearest telephone.

c. A minimum of two and a maximum of eight persons will be allowed on-site at any one time.

d. The property owner is not required to sign the SSHP, but should be politely asked to participate in the safety briefing.

3. MISSION: Reconnoiter, document, and photograph areas on Chopawamsic Training Site suspected to be contaminated with UXO and/or toxic chemical munitions. Areas where munitions have been recovered will be investigated.

4. SAFETY PRECAUTIONS: All team members will stay within sight of each other while on site. A first aid kit will be on hand. The following three basic safety rules apply at all times:

a. Rule 1 - Do not touch or pick up anything at the site.

b. Rule 2 - Do not step anywhere you cannot see where you place your foot.

c. Rule 3 - There will be no eating or smoking at the site. Hands will be washed after the survey and prior to eating. Drinking fluids should be done during periodic breaks.

5. SITE COMMUNICATIONS: The primary means of communicating with other team members will be by voice. Team members will always remain within sight of each other. Cellular telephones should be carried to facilitate and expedite calling for emergency medical services.

6. NATURAL HAZARDS: Extreme cold conditions with snow and ice expected. Possible muddy wetland areas.

7. ORDNANCE HAZARDS: Rockets (2.36" & 4.5") as well as 81mm mortar rounds.

8. HAZARD EVALUATION: Estimate the overall hazards using the following guidelines: (check appropriate item)

[ ] Low (small arms ammunitions)
[ ] Moderate (practice bombs with spotting charge)
[X] High (high explosive munitions, toxic chemicals, WP)
[ ] Unknown

9. EMERGENCY PROCEDURES: First aid will be rendered for any injuries. In the event of a detonation, everyone should freeze until the situation can be assessed by the team leader. Unnecessary injuries can be avoided by not panicking and planning a logical course of action, which may include retracing your steps out of an impact area. Emergency medical services will be contacted by the most expeditious means available.

10. SAFETY STATEMENT: Safety is everyone's business. No unnecessary risks will be taken to obtain photos or other data. Team members are responsible for notifying the project Manager or safety Officer of any physical conditions that may impede or prevent their accomplishment of the mission. An example is allergic reactions to bee stings.

Important Phone Numbers

Emergency medical service:	911
Law enforcement agency:	911
Huntsville Safety:	(205) 895-1582/1579
	(800) 627-3532, PIN 777-2534
Police non-emergency number:	

SSHP reviewed by: GEORGE SLOAN

Encls

1. Safety Briefing Attendance
2. Safety gear

SITE SURVEY SAFETY BRIEFING

PPE		Site Hazards	
✓	Work Clothing	✓	OEW
✓	Gloves		CSM
	Hardhat		HTW
	Hearing protection	✓	Slips, falls, trips
✓	Safety shoes	✓	Wildlife
	Safety glasses	✓	Vegetation

Weather Precautions

	Cold/Heat
	Severe Weather

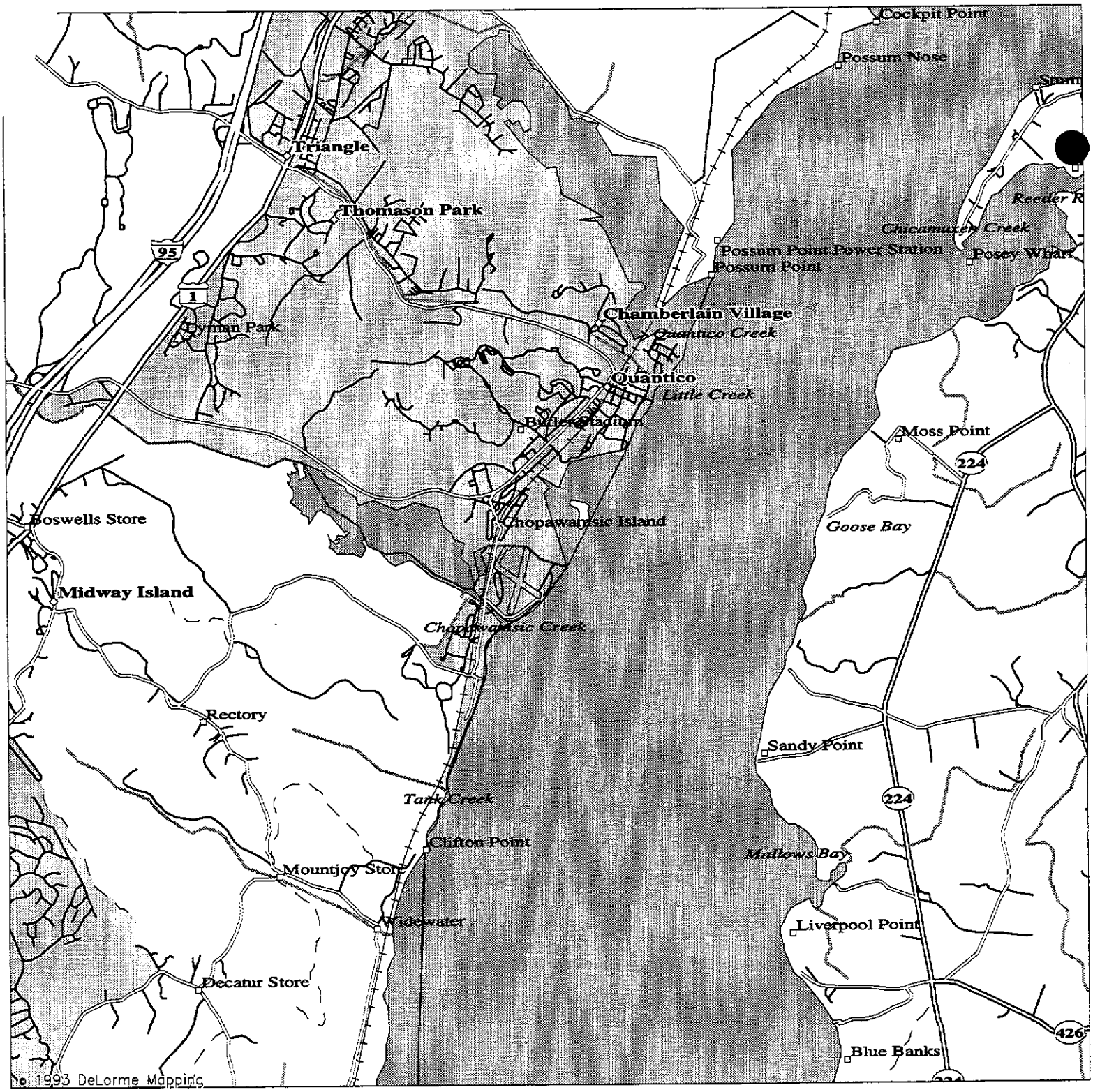
Safety Briefing Attendance

All team members and any accompanying personnel will be briefed and sign this form:

Print name and organization	Signature
DENNIS W. GILMORE PM-M	
GREGG KOCHER PM-M	
M. KEVIN MC CAFFREY PM-M	

MANDATORY MINIMUM SAFETY GEAR

First aid kit (individual)	✓
Survival kit	✓
Fire starter	✓
Space blanket	✓
Whistle	✓
Mirror	✓
Cellular phone	✓
Flash light	✓
Survey tape	✓
Canteen	✓



LEGEND

- Population Center
- Geo Feature
- Town, Small City
- County Boundary
- Street, Road
- Trails
- Major Street/Road
- Interstate Highway
- US Highway
- Railroad
- River
- Airfield
- Land Mass
- Open Water
- Intermittent River
- Utility (powerline)

Scale 1:62,500 (at center)

1 Miles

2 KM

Mag 13.00
Mon Feb 06 10:26:59 1995

APPENDIX C-2
Findings and Determinations

DEPARTMENT OF THE ARMY
NORTH ATLANTIC DIVISION, CORPS OF ENGINEERS
90 CHURCH STREET
NEW YORK, N.Y. 10007-2979

IN REPLY REFER TO

CENAD-PL-F (1105-2-10c)

JAN 12 1993

MEMORANDUM FOR

COMMANDER, DEPARTMENT OF THE ARMY HQ, U.S. ARMY CORPS OF ENGINEERS, ATTN: CEMP-R, WASHINGTON, DC 20314-1000
COMMANDER, HUNTSVILLE DIVISION, ATTN: CEHND-DE, POB 1600, HUNTSVILLE, AL 35807-4301

SUBJECT: DERP-FUDS Inventory Project Report (INPR) for Site No. C03VA019400, Chopawamsic Troop Training Site, Prince William County, Virginia

1. I am forwarding the subject INPR for appropriate action. The site is eligible for DERP-FUDS.

2. I recommend that CEHND determine if further study and remedial action regarding a potential OEW project are needed at the site.

Encl
as

PAUL J. CHINEN
Brigadier General, USA
Commanding

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL # of pages ▶ 16

To Charlene Boecklen	From G. Ellixson
Dept./Agency St Louis Dist	Phone # 804 441 7214
Fax # 314 331 88[redacted]	Fax # 804 [redacted]441 7831

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

DEPARTMENT OF THE ARMY
NORFOLK DISTRICT, CORPS OF ENGINEERS
FORT NORFOLK, 803 FRONT STREET
NORFOLK, VIRGINIA 23510-1096

REPLY TO
ATTENTION OF:

CENAO-EN-DG (200-1c)

28 September 1992

MEMORANDUM FOR Commander, North Atlantic Division, ATTN: CENAD-PL-F, (Arabatzis)

SUBJECT: DERP-FUDS Inventory Project Report (INPR) for Site NO. C03VA019400, Chopawamsic Troop Training Site, Prince William County, Virginia.

1. This INPR reports on the DERP-FUDS preliminary assessment of Chopawamsic Troop Training site, Prince William County, Virginia. A site visit was conducted on 23 July 1992. The site survey summary sheet and site maps are Enclosures 1 through 4. A recommended Findings and Determination of Eligibility is Enclosure 5.

2. We have determined that the site was formerly used by the DOD. There is a possibility that unexploded ordnance may exist on the site. Therefore, we recommend an OEW project be proposed. A project summary sheet is Enclosure 6. A copy of the RAC form is Enclosure 7 (a thru h).

3. I recommend that you:

a. Approve and sign the Findings and Determination of Eligibility.

b. Forward a copy of this INPR to CEMP requesting approval and funds for this OEW project.

c. Forward a copy of this INPR to HND for appropriate action.

R. C. JOHNS
Colonel, Corps of Engineers
Commanding

Encls

SITE SURVEY SUMMARY SHEET
FOR
DERP-FUDS SITE NO. CO3VA019400
CHOPAWAMSIC TROOP TRAINING SITE
PRINCE WILLIAM COUNTY, VIRGINIA

SITE NAME: Chopawamsic Troop Training site a.k.a. Prince William Forest National Park

LOCATION: Prince William County (Triangle), Virginia

SITE HISTORY: In 1942, the Army acquired permit use of 9,870 acres from the Department of Interior and 1,141.23 acres in fee, by condemnation. The site was used as an Army troop training installation for the Office of Strategic Service for counter intelligence agents. The property was improved with the necessary support facilities for personnel and maintenance as well as three target ranges, a magazine, and a heating plant. The permit was terminated early 1946. Remediation and restoration measures were taken in 1947. The entire parcel was in custody of the National Park Service by 1948. The site is now referred to as Prince William Forest National Park. The property is used as picnic and camping grounds as well as a national forest reserve.

SITE VISIT: A site visit was conducted on 23 July 1992 by P. Bowen, D. Lutz, and E. Tibay. J. K. Pinkard , a Park Service ranger, was available at the Park Visitor Center for information; and another ranger, Tom Davis, guided a tour to three known existing Army buildings. Of these facilities, two were used for munitions storage. These block buildings were uninsulated and contained no heating system. One is presently being used for storage and the other is planned to be demolished under NPS supervision. Both buildings are clear of any ordnance; however, in 1985, a mortar shell was found imbedded in the roof of a building and removed by an Army demolition team.

The third building originally used as a movie theater is located about three miles from the two munitions storage facilities. It also was not heated. This building is now being used as a gymnasium for the campground.

Pinkard stated that all other buildings that existed on the premises during the time of DoD use were removed by the Army and/or the Park Service itself. The three buildings that were inspected are (or were at one time) beneficially used after DoD usage. The areas apart from the building locations are heavily wooded improved with campgrounds, picnic area, and a trailer park scattered within the 11,011.23-acre site.

PROJECT CONDITION: An OEW project is proposed. A risk assessment code of III was determined. However, a justification is enclosed to reduce this project to a RAC of IV based on the size of the site and the limited troops using this facility.

AVAILABLE STUDIES AND REPORTS: None provided.

PA POC: ~~Paul R. Bowen, (804)~~ 441-7669, is the District POC.

Oscar Quijano

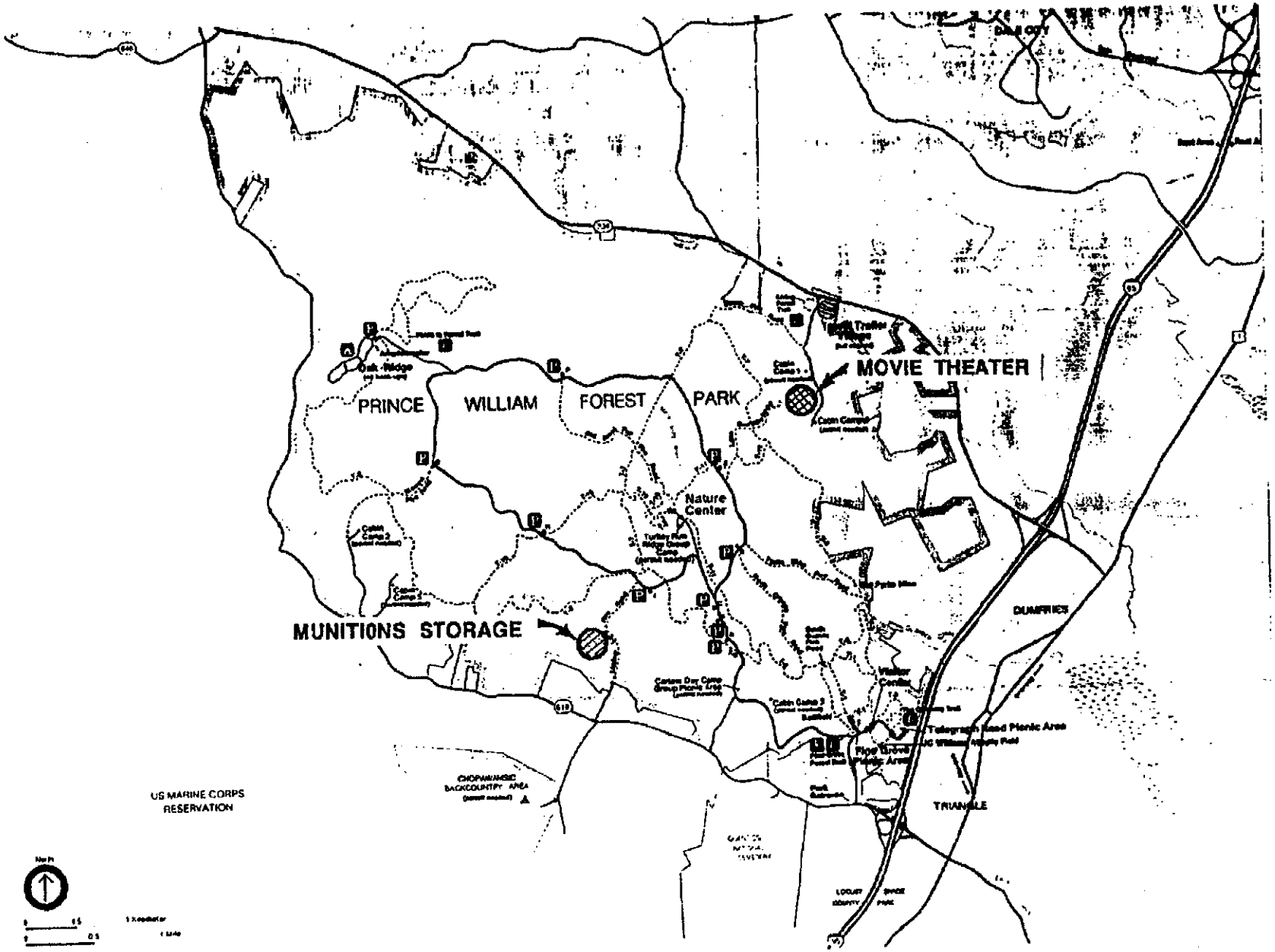
Encl1


AREA LOCATION
New York
Boston
Portland
Philadelphia
Atlantic City
Richmond
Norfolk
Wilmington
Charleston
Savannah
Jacksonville
Cape Canaveral
West Palm Beach
Miami Beach
St Petersburg
Buffalo
Toronto
Pittsburgh
Cleveland
Quebec
Halifax
BERMUDA
THE BAHAMAS
A T L A
O C
NORTH CAROLINA
GEORGIA
PRINCE EDWARD I.
Atlantic City
Hamilton

Encl 2


AREA LOCATION
PRINCE WILLIAM FOREST PARK
Chambersburg
Hagerstown
Frederick
BALTIMORE
WASHINGTON
Alexandria
Manassas
Fredericksburg
Richmond
Petersburg
Hopewell
Williamsburg
Newport News
Hampton
Norfolk
Portsmouth
Virginia Beach
Chesapeake
Suffolk
Elizabeth City
Cambridge
Salisbury
Ocean City
Dover
Wilmington
Lancaster
York
Annapolis
Chincoteague I.
Delaware Bay
Cape May
Rehoboth Beach
Lexington Park
Tappahannock
Emporia

Encl 3



CHOPAWAMSIC TROOP TRAINING SITE
SITE LOCATION MAP

Encl 4

DEFENSE ENVIRONMENTAL RESTORATION PROGRAM FOR FORMERLY USED SITES FINDINGS AND DETERMINATION OF ELIGIBILITY CHOPAWAMSIC TROOP TRAINING SITE PRINCE WILLIAM COUNTY, VIRGINIA Site No. C03VA019400

FINDINGS OF FACT

1. The Army acquired the use of 9,870 acres by permit from the Department of the Interior on 16 May 1942, and acquired an additional 1,141.23 acres in fee by condemnation dated 26 September 1942.

2. The site was used as a troop training site and included Army constructed facilities for personnel support and repair. Also included were three target ranges, magazine, and a heating plant

3. Disposal was by transfer to the National Park Service. The permit was terminated on 19 February 1946, and the remaining 1,141.23 acres were transferred to the National Park Service on 23 April 1948. The National Park Service, in a letter dated 4 January 1946 stated that the property should be returned to the DOI without restoration as long as the Army buildings remained in place. Mr. Phil Bureck, of the Prince William Forest Park, stated by telephone on 6 May 1991 that he does not know of any remaining Army facilities on the lands of the National Park.

DETERMINATION

Based on the foregoing findings of fact, the site has been determined to have been formerly used by DoD. It is therefore eligible for the Defense Environmental Restoration Program - Formerly Used Defense Sites established under 10 USC 2701, et seq.

28 Sept 92
(Date)

RECOMMENDED

R. C. JOHNS
Colonel, Corps of Engineers
Commanding

12 JAN 93
(Date)

APPROVED

PAUL Y. CHINEN
Brigadier General, USA
Commanding

Encl 5

PROJECT SUMMARY SHEET
FOR
DERP-FUDS SITE NO. CO3VA019401
CHOPAWAMSIC TROOP TRAINING SITE
PRINCE WILLIAM COUNTY, VIRGINIA

PROJECT DESCRIPTION: The site is approximately ten thousand acres and may contain unexploded ordnance. A mortar shell was found and removed in 1985. Location of the firing ranges and ordnance is unknown.

PROJECT ELIGIBILITY: The ordnance is definitely of DoD origin as a result of OSS troop training.

POLICY CONSIDERATIONS: The site is now used as a recreational/hunting preserve owned by the National Park Service.

PROJECT RECOMMENDATIONS: A thorough record investigation is needed to determine exact locations of target ranges and possible ordnance sites.

OEW RAC FORM: Attached.

PA POC: Paul R. Bowen, (804) 441-7669, is the District POC.

Encl6

10 Jul 1992
Previous editions obsolete

RISK ASSESSMENT PROCEDURES FOR
ORDNANCE AND EXPLOSIVE WASTE (OEW) SITES

Site Name Chopawamsic Training Site
Site Location Prince William County, VA.
DERP Project # C03VA019401
Rater's Name Paul Bowen
Organization CENAO-EN-DG
RAC 4

OEW RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882B and AR 385-10.

The OEW risk assessment is based upon documented evidence consisting of records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observations, interviews, and measurements. These data are used to assess the risk involved based upon the hazards identified at the site. The risk assessment is composed of two factors, hazard severity and hazard probability.

Any field activities should be made with the assistance of qualified EOD personnel.

Part I. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPE OF ORDNANCE

A. Conventional Ordnance and Ammunition

	YES VALUE	NO VALUE	VALUE
Small Arms (.22 cal - .50 cal)	1	0	1
Medium/Large Caliber (20 mm and larger)	10	0	10
Bombs, Explosive	10	0	0
Bombs, Practice (w/spotting charges)	6	0	0
Grenades, Hand and Rifle, Explosive (Mortars)	10	0	10
Grenades, Practice (w/spotting charges)	4	0	0
Landmines, Explosive	10	0	0
Landmines, Practice (w/spotting charges)	4	0	0
Rockets, Guided Missiles, Explosive	10	0	0
Detonators, Blasting Caps	6	0	0
Conventional Ordnance and Ammunition Value (Maximum of 10).			10

Encl 7a

2'd

B. Pyrotechnics(For munitions not described above.)

	YES VALUE	NO VALUE	VALUE	
Munition (Container) Containing White Phosphorus or other Pyrophoric Material (i.e., Spontaneously Flammable)	10	0	0	
Munition Containing A Flame or Incendiary Material (i.e., Napalm, Triethlaluminum Metal Incendiaries)	6	0	0	
Flares,Signals, Simulators	4	0	0	
Pyrotechnics Value (Maximum of 10).				0

C. Bulk High Explosives (Bulk explosives not an integral part of conventional ordnance; uncontainerized.)

	YES VALUE	NO VALUE	VALUE	
Primary or Initiating Explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10	0	0	
Demolition Charges	10	0	0	
Booster, Bursting or Fuze Explosives (PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8	0	0	
Military Dynamite	6	0	0	
Less Sensitive Explosives (Ammonium Nitrate, Explosive D, etc.)	3	0	0	
High Explosives Value(Maximum Value of 10)				0

D. Propellants

	YES VALUE	NO VALUE	VALUE	
Solid or Liquid Propellants	6	0	0	0

E. Radiological/Chemical Agent/Weapons

	YES VALUE	NO VALUE	VALUE
Toxic Chemical Agents (Choking, Nerve, Blood, Blister)	25	0	0
Radiological	15	0	0
Riot Control and Miscellaneous (Vomiting, Tear, etc.)	5	0	0

Encl 7b

Radiological/Chemical Agent/Weapons Value (Maximum 25). 0

Total Ordnance and Explosive Waste Characteristics Value (Total = A + B + C + D + E with a Maximum value of 61). 10

Apply this value to Table 1 to determine Hazard Severity Category.

TABLE 1

HAZARD SEVERITY

Description	Category	Value
CATASTROPHIC	I	≥21
CRITICAL	II	≥13 <21
MARGINAL	III	≥5 <13
NEGLIGIBLE	IV	≥1 <5
NONE		0

* Apply Hazard Severity Category to Table 3.

Encl 7c

Part II. Hazard Probability. The probability that a hazard has been or will be created due to the presence and other rated factors of unexploded ordnance or explosive materials on a formerly used DOD site.

AREA, EXTENT, ACCESSIBILITY OF CONTAMINATION

A. Locations of Contamination

	YES VALUE	NO VALUE	VALUE
On the surface	5	0	0
Within Tanks, Pipes, Vessels or Other confined locations.	4	0	0
Inside walls, ceilings, or other parts of Buildings or Structures.	3	0	0
Subsurface	2	0	2
Value for location of UXO. (Maximum value of 5).			2

B. Distance to nearest inhabited locations or structures likely to be at risk from OEW site (roads, parks, playgrounds, and buildings).

Distance to Nearest Target	VALUE
Less than 1250 feet	5
1250 feet to 0.5 miles	4
0.5 miles to 1.0 mile	3
1.0 mile to 2.0 miles	2
Over 2 miles	1
Distance to Persons Value (Maximum Value of 5).	2

C. Numbers and types of Buildings within a 2 mile radius measured from the hazardous area, not the installation boundary.

Number of Buildings	VALUE
0	0
1 to 5	1
6 to 10	2
11 to 15	3
16 to 25	4
26 and over	5
Number of Buildings Value (Maximum Value of 5).	0

Encl 7d

5'd

D. Types of Buildings (within a 2 mile radius)

	VALUE
Educational, Child Care, etc.	5
Residential, Hospitals, Hotels, etc.	5
Commercial, Shopping Centers, etc.	5
Industrial Warehouse, etc.	4
Agricultural, Forestry, etc.	3
Detention, Correctional	2
Military	1
No Buildings	0
Types of Buildings Value (Maximum Value of 5).	0

E. Accessibility to site refers to access by humans to ordnance and explosive wastes. Use the following guidance:

Barrier	Assigned Value
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility;	0

or

Barrier	Assigned Value
An artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates or other entrances to the facility (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the facility).	0
Isolated site	1
Security guard, but no barrier	2
A barrier, (any kind of fence) but no separate means to control entry	3
Barriers do not completely surround the facility	3
No barrier or security system	5
Accessibility Value (Maximum Value of 5).	1

Encl 7e

F. Site Dynamics - This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil errosion by beaches or streams, increasing land development that could reduce distances from the site to inhabitated areas or otherwise increase accessability.

	VALUE
None Anticipated	0
Expected	5
(Maximum Value of 5)	0

Total value for hazard probability.
Sum of Values A through F.
(Not to exceed 30). 5

Apply this value to Hazard Probability Table 2 to determine Hazard Probability Level.

TABLE 2

HAZARD PROBABILITY

Description	Level	Value
FREQUENT	A	≥27
PROBABLE	B	≥21 <27
OCCASIONAL	C	≥15 <21
REMOTE	D	≥ 8 <15
IMPROBABLE	E	<8

* Apply Hazard Probability Level to Table 3.

Part III. Risk Assessment. The risk assessment value for this site is determined using the following Table 3. Enter with the results of the hazard probability and hazard severity values.

TABLE 3

Probability Level		FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
Severity Category:						
CATASTROPHIC	I	1	1	2	3	4
CRITICAL	II	1	2	3	4	5
MARGINAL	III	2	3	4	4	(5)
NEGLIGIBLE	IV	3	4	4	5	5

RISK ASSESSMENT CODE (RAC)

RAC 1 Imminent Hazard - Emergency action required to mitigate the hazard or protect personnel (i.e., Fencing, physical barrier, guards, etc.).

RAC 2 Action required to mitigate hazard or protect personnel. Initial project phase--phased EECA.

RAC 3 Action required to evaluate potential threat to personnel. Initial project phase--Archives search and site investigation.

SEE ATTACHED DOCUMENT

(RAC 4) Action required to evaluate potential threat to personnel. Initial project phase--Archives search.

RAC 5 No action required.

NOTE: Other phases may be considered depending on individual site conditions.

Justification. In narrative form, summarize the documented evidence that supports this risk assessment.

SEE ATTACHED

Encl 7g

JUSTIFICATION:

A code III, marginal probablity level is obtained per the risk assessment code . However, the severity category should be considered negligible instead of marginal, resulting in a code IV. The only ordinance known to have been found since DoD occupation is the single mortar round found in 1985. But, a value of 10 to the small arms range is assigned since records indicate one existed; however, the location is unknown. The fact that the OSS operated this facility would indicate that this was a much smaller, more covert operation than normally associated with troop training. The area (>10,000 acres), is quite large with some areas reserved for camping and recreational activities while other parts of the park are remote and used only for periodic hunting. A thorough record search of the training site is the most cost effective and prudent approach to this problem. This information can then be assimilated to determine the next step. If there are any questions concerning this project contact Paul R. Bowen, (804) 441-7669, District POC.

APPENDIX C-3
Restoration Survey, Chopawamsic Training Center,
Quantico, VA, 7 December 1945, includes Letter:
Clearance of Range Land in Chopawamsic Park).

LIST OF IMPROVEMENTS TO PROPERTY BY WAR DEPARTMENT AND/OR DAMAGES RESULTING FROM WAR DEPARTMENT OCCUPANCY WITH ESTIMATED COST OF RESTORATION, SUBMITTED PURSUANT TO THE REQUIREMENTS OF SECTION 8305.8 OF SPB REGULATION NO. 5 DATED 9 OCTOBER 1945.

(Costs shown in BLOCK 12 - SCHEDULE A)

BLOCK 6 - SCHEDULE I
Form SPB-5 Report
Chopawamsic Recreational Demonstration Area
Prince William and Stafford Counties
Quantico, Virginia

WAR DEPARTMENT
UNITED STATES ENGINEER OFFICE
First and Douglas Streets, N. W.
Washington 25, D. C.

602 Wash D O MAWVK 7 December 1945

RESTORATION SURVEY
CHOPAWAMSIC TRAINING CENTER
QUANTICO, VA.

1. The Training Center consists of 44 tracts owned by the U. S. Government and under the jurisdiction of the War Department, and land under jurisdiction of the Department of Interior.

2. Land under Jurisdiction of the War Department. Forty-four tracts have been acquired, consisting of the following:

Tract No.	Vendor	Direct Purchase Acreage	Direct Purchase Cost	Condemnation Acreage	Condemnation Cost
200	Robert Taylor	8	$2,790.00		
201	Georgia A. Norman	103	4,300.00		
202	Norman Waite	54.5	1,400.00		
203	Joseph Reid Estate			74.5	$4,200.00
204	Walter Kendall	.222	250.00		
205	Hannah Gaines	4.5	815.00		
206	Ardella Nash			1.	400.00
207	Norman L. Henderson	.688	100.00		
208	Joe E. Clark			25.	1,050.00
209	Provie L. Henderson	.724	100.00		
210	Bertie E. Kyer	.790	100.00		
211	Cleve C. Henderson	.598	100.00		
212	James York McKay Lodge	.33	750.00		
213	Virginia Taylor			100.	4,180.00
214	Jennie V. Tuell			6.	800.00
215	Arthur E. Williams Estate			3.	500.00
216	Harvey H. Williams	3.44	150.00		
217	Charles Byrd Estate			22.5	1,500.00
218	Henry Logan Early			22.5	2,325.00
219	Harry R. & Resser V. Martin	10.9	1,610.00		
220	William E. Kindall			9.5	200.00
221	J.H.L. Davis			7.7	1,025.00
222	Albert Davis			21.	450.00
223	Annie E. Keys Estate			47.	1,050.00
224	Napoleon Watson	10.	800.00		
225	John Davis			14.6	250.00
226	Wm. Warfield Kendall (12)	17.97	2,000.00		
227	Andrew J. Williams Estate			28.56	1,100.00
228	Quinton O. Bates			6.	1,025.00
229	Mary Elizabeth Bates	38.	1,000.00		
230	Jennie Taylor	10.	600.00		

BLOCK 6 - SCHEDULE I
Form SPB-5 Report
Chopawamsic Recreational Demonstration Area
Prince William and Stafford Counties
Counties, Virginia

602 Wash C O MAWVK
Chopewamsic Train Center

Tract No.	Vendor	Direct Purchase Acreage	Direct Purchase Cost	Condemnation Acreage	Condemnation Cost
235	Randolph & Sarah A. Doyle			2.	$ 500.00
236	Harry Miller	183.	$4,425.00		
242	Fred F. Liming			33.	1,400.00
246	G. H. Matherson	1.5	125.00		
251	Joseph Abel			10.	1,100.00
252	Kyle Williams Estate			5.	800.00
253	Randolph Doyle Estate			5.	300.00
255	Lemuel W. Timmons Estate	30.	1,200.00		
256	W. W. Liming	140.	5,915.00		
257	Wilson W. Cornwell			2.	100.00
263	Annie E. Keys Estate			42.5	850.00
264	Annie E. Keys Estate			26 26.8	650.00
265	J. J. Murphy Estate			6.	350.00
	TOTAL	618.162	$28,530.00	521.16	$26,105.00

* 3. Land Under Jurisdiction of the Department of Interior. A large percentage of this land is in timber. Only a few small portions of the tract were used for housing. The entire area was used for training personnel of the Office of Strategic Services. The portions used for housing personnel consisted of four groups of buildings in Area A, and 2 groups in Area C. In Area A the War Department constructed a storage magazine surrounded by a stockade fence; and a 200-yard rifle range. Three cleared areas of approximately 1 acre, 4 acres and 20 acres respectively were used for demolition. The original groups of buildings were all organized camps, operated by the National Park Service.

4. Of these camps A-2, A-5, A-3, C-1 and C-4 were built by the National Park Service. Camp A-4 was formerly a CCC Camp.

a. Camp A-2 when taken over consisted of 4 units, each having 6 cabins for 4 men each, 2 cabins for 2 men each, a lodge or recreation building and 1 latrine. Installations by the War Department in the existing latrines consisted of 1 shower, 1 urinal, 1 water heater and 1 hot water storage tank, together with the necessary piping. In addition the War Department also constructed 1 new 25-man latrine in each of the 4 units. Existing buildings, common to all of the four units, consisted of 1 craft shop, 1 central bathhouse, 1 infirmary, 1 staff quarters, 1 administration building, 1 helps' quarters, 1 storage building, 1 garage with 3 stalls and storeroom, 1 mess hall and 1 elevated water tank. The existing sewage disposal system was enlarged by adding a new distribution box and 1000 feet of field tile. A new 40'x60' pistol range

* See Page 5

building was constructed in the area by the War Department. All the buildings were winterized and heated by means of space heaters which have since been removed.

b. Camp A-5 comprises 2 units. Unit A consisted of 6 cabins for 4 men each, 2 cabins for 2 men each, 1 latrine, 1 mess hall, 1 infirmary, 1 helps' quarters, and 1 craft shop. Unit B consisted of 6 cabins for 4 men each, 2 cabins for 2 men each, 1 latrine, 1 lodge or recreation building and 1 staff administration building. Both areas are supplied with water from a well and pump house in Unit A and an elevated tank in Unit B. All buildings in both units were constructed by National Park Service. The War Department winterized all buildings and heated them by means of space heaters, which have since been removed. The War Department also installed in the mess hall in Unit A the following equipment: 1 refrigerating unit, 1 dishwasher, 1 meat block, 1 deep fat fryer and 1 steam table. At the lake nearby, the War Department constructed a 16'x30' boathouse.

c. Camp A-3 comprises 3 units. Unit A, consisted of 2 cabins for 2 men each, 4 cabins for 4 men each, 4 cabins for 6 men each, 1 lodge or recreation building and 1 latrine. The War Department constructed 1 new 25-man latrine in this unit. Unit B consisted of 3 cabins for 10 men each, 1 latrine and 1 lodge or recreation building. Unit C consisted of 6 cabins for 10 men each, 1 latrine and 1 lodge or recreation building. Existing buildings, common to all three units are as follows: 1 mess hall, 1 infirmary, 1 nursery, 1 helps' quarters, 1 museum, 1 craft shop, 1 storage building, 1 administration building, 1 staff cabin for 2 men, 1 staff cabin for 6 men, 1 staff latrine and 1 elevated water tank. The War Department winterized all buildings in Camp A-3 and heated them by means of space heaters, which have since been removed.

d. Camp A-4 is a former CCC Camp, NP-16. In this camp the War Department constructed 1 new 20'x100' officers' quarters, 1 new 100-man latrine, 1 new commissary building 20'x40' + 20'x20', 1 new guard house 8'x8' and 1 new storage building 8'x10'.

e. Camp C-1 has four units. Each unit consisted of 6 cabins for 4 men each, 2 cabins for 2 men each, 1 lodge or recreation building and 1 latrine. Existing buildings common to the four units consisted of 1 machine shop, 1 mess hall, 1 infirmary, 1 storage building, 1 administration building, 1 staffs' quarters, 1 staff latrine, and 1 helps' quarters. In this camp the War Department constructed the following new buildings: 1 motor repair shop 30'x40', to replace a similar building burned during occupation by Office of Strategic Services, 1 transmitter building 30'x30' (CCC portable type), 1 storage building 16'x16', 1 latrine for 25 men 15'x24' and two guard houses 8'x8'. The War Department winterized all buildings in this camp and heated them by means of space heaters, which have since been removed.

f. Camp C-4 has 5 units. Each unit consisted of 3 cabins for 10 men each, 1 lodge or recreation building, and 1 latrine. Existing Buildings

common to the five units consisted of 1 mess hall, 1 craft shop, 1 infirmary, 1 nursery, 1 central bathhouse, 1 administration building, 1 staff quarters, 1 helps' quarters and 1 storage building. The War Department constructed the following new buildings: 1 officers' quarters 20'x 100'; 1 school and recreation building 20'x 100' + 40'x 100'; 3 storage buildings 16'x16'; 1 addition to mess hall 20'x60', portable type building; 1 quonset hutment 20'x60'; 1 latrine 30'x40' for 100 men, and 25 tent platforms and sidewalls for 16'x16' pyramidal tents.

5. On 6 December 1945, Capt. Ira B. Lykes, Manager of the Chopawamsic Area, was contacted and the following information obtained from him:

"The National Capital Parks of the National Park Service, U. S. Department of the Interior will accept the return from the War Department of all lands, buildings and improvements granted the War Department under the terms of the original permit, provided:

a. "That no further alterations or changes are made in the buildings or structures as now constituted and established.

b. "That the War Department or its designated agency undertake to clear all lands used by them within the Area under the permit, or other lands acquired within the bounds of the Area, of all demolitions, explosives or other dangerous explosive or combustible materials of warfare that may still remain upon the lands."

6. Captain Lykes has in his possession a letter from the Department of the Interior giving him authority to represent the National Park Service in all negotiations related to the restoration of this property.

* Note:

With reference to paragraph 3, page 2, this schedule, the following additional information is furnished:

Two magazines, 24' x 42', are located on Tract No. 229, acquired by the War Department from M. E. Bates.

The two hundred yard rifle range is believed to be located on National Park Service land but may lie partly on Tracts 224 or 230, acquired by the War Department from N. Watson, Jr., and Jennie Taylor, respectively.

The one acre demolition area is located entirely on Tract No. 256, acquired by the War Department from W. W. Liming.

The four acre demolition area is located entirely on Tract No. 208, acquired by the War Department from J. E. Clark; however, the effects of the demolition work carried on at this area may have extended to War Department-owned Tract No. 213.

The twenty acre demolition area is located entirely on Tract No. 201, acquired by the War Department from G. A. Norman.

Chopowamsic Park Area

Tract 201

There is no metes and bounds description of this tract available in the Clerk's Office of Prince William County, Virginia. The best description obtainable is as follows:

All that certain piece or parcel of land situate on the Warrenton and Potomac Road, near Belle Haven Church, in Prince William County, Virginia, and bounded by the road and the lands of C. H. Holmes, D. G. Holmes, C. H. Randall, Thomas Randall and others, and known as the Thomas Jones Farm, containing 111 acres, more or less.

Being a portion of the property conveyed to Thomas Jones by Daniel Cole and wife by deed dated May 13, 1825, recorded in D. B. 10, page 66, and having passed upon the death of said Jones intestate to his heirs; the interests of said heirs and their descendants, with the exception of the interest of L. E. Jones, having been acquired by William T. Jones by deed dated May 30, 1900, recorded in D. B. 49, page 328, by deed dated December 1, 1900, recorded in D. B. 49, page 327, by deed dated July 25, 1908, recorded in D. B. 58, page 307, and by inheritance from Frances Jones; said William T. Jones having died intestate his interest in the property was inherited by Georgia A. Norman as his sister and sole distributee and surviving heir at law according to list of heirs of said William T. Jones recorded in D. B. 76, page 449; said Georgia A. Norman having theretofore acquired the interest of L. E. Jones by deed duly recorded and also acquired an interest in the property by inheritance from Frances Jones.

Less and except eight acres, more or less, conveyed to Robert Taylor by Georgia A. Norman by deed dated September 6, 1935, recorded September 6, 1935, in D. B. 96, page 24.

CHOPAWAMSIC PARK AREA, VA

TRACT NO. 213

That certain piece or parcel of land situated in the County of Prince William, State of Virginia, being bounded on the northeast by the land of the Department of Interior; on the northeast by the land of Joe Clark; on the East by the land of the Department of Interior; on the South and northwest by the land of the Department of Interior.

Being the same land as that devised to Virginia Taylor from Robert A. Taylor, her husband, in a will dated January 11, 1937, and recorded in Will Book 4, Page 74, in the Office of the Clerk of Prince William County, Virginia, and more particularly described as follows: Beginning at a point (1), said point being on Highway No. 620, 4450 feet southerly from the intersection of Highways No. 620 and No. 644; thence South 26 degrees 50 minutes 20 seconds East 890 feet to a point; thence South 32 degrees 35 minutes 50 seconds West 644.25 feet to a point; thence North 59 degrees 15 minutes 50 seconds West 583.90 feet to a point; thence North 65 degrees West 2200 feet to a point; thence North 41 degrees East 1480 feet to a point; thence South 81 degrees 43 minutes 40 seconds East 1766.33 feet to a point; and thence South 26 degrees 50 minutes 20 seconds East 150 feet to the point of beginning, and containing 100 acres, more or less.

Chopowamsic Park Area

Tract 224

All that certain tract or parcel of land situate on Quantico Run, in Prince William County, Virginia and bounded and described as follows:

BEGINNING at (1) a point about the center of said run and 1 pole from a Birch on bank of the run, thence with said run and the lines of Liming, S. 60° 06' W. .25 poles to a stake in said line; thence N. 33° 34' W. 44.3 poles to a stone in Bates line at (3) thence with Bates line N. 57° E. 14.5 poles to a marked white oak on the south bank of the run at (4) a corner to Bates; thence down the run and making it the line to (1) the beginning and containing ten acres, more or less. Said land being a part of the Julia Chapman Tract and was conveyed to Henry Jones by deed from James Spance dated July 12,1909 and recorded in D. B. No. 58, page 405 of the Land Records of Prince William County, Virginia.

Chopowamsic Park Area

Trect 229

All that certain tract or parcel of land lying and being in Dumfries Magisterial District, Prince William County, Virginia, and bounded as follows: on the North by the land of Jennie Taylor; on the East by the land of Sarah A. and Randolph Doyle; on the South by the land of W. W. Liming, and on the southwest and northwest by the land of the Department of Interior, and Highway No. 620. This tract of land being bisected in the northwestern portion by Highway No. 620 in a general northeasterly-southwesterly direction, and the southwestern portion of this tract being bisected by Highway No. 620 in a general northwesterly-southeasterly direction, and more particularly described as follows:

All that certain tract or parcel of land lying and being situate in Dumfries Magisterial District, Prince William County, Virginia, and bounded and described as follows, to-wit:

BEGINNING at a marked white oak on the hill side, corner to Chapman's; thence with Chapman's line North 32 West 94 poles to a cherry tree stump and stone on a hill; thence through the tract South 53 West 69 poles to a stone pile near a pine and cedar, in the outline of the tract; thence with the outline South 14¼ East 63 poles to a stake in place of a poplar stump, and thence North 75½ East 92.2 poles to the beginning, containing 38 acres, 1 rood and 24 poles, more or less, and being the same land which was conveyed by James A. Hammond to William W. Liming by deed bearing date October 2, 1911, and recorded in D. B. 61, page 334 of the Land Records.

Under and by virtue of authority of a decree of the Circuit Court of Prince William County, Virginia, rendered at the December term, 1912, in the said Chancery Cause of Bates et als v. Liming et als. Appointing and directing the said C. E. Nical as Special Commissioner to convey unto said Mary Elizabeth Bates a certain tract or parcel of land lying and being situated in Prince William County, Virginia.

Being the same property conveyed to Mary Elizabeth Bates, wife of Issie Bates by C. E. Nical, Special Commissioner of the Circuit Court of Prince William County, Virginia, in the Chancery cause of Bates, et al vs. Liming, et al., lately pending in the Circuit Court of Prince William County, by deed dated January 25, 1913, recorded January 29, 1913 in D. B. 63, page 203.

Being the same property conveyed to United States of America by Mary Elizabeth Bates, widow, by deed dated October 23, 1942, recorded October 23, 1942, D. B. 109, page 501, Prince William County, Virginia.

Chopowamsic Park Area

Tract 230

All that certain tract or parcel of land lying and being in Dumfries Magisterial District, Prince William County, Virginia, and bounded as follows: on the North by the land of Napoleon Watson, Junior; on the southeast by the land of the Department of Interior; on the South by the land of Mary Elizabeth Bates, and on the West by Highway No. 620, and more particularly described as follows:

Beginning on the County Road at the North corner of Henry Jones land marked by stone and stake, thence with said road southwest to Hammonds line to a stone near a big walnut tree, thence southeast to a marked mulberry in Hammonds Spring Branch; thence due East to Jones corner, then to the beginning, containing ten acres, more or less.

Chopowamsic Park Area

Tract 256

All that certain tract or parcel of land lying and being in Dumfries Magisterial District, Prince William County, Virginia, and bounded as follows: on the northeast by the land of the Department of Interior; on the southeast by the lands of the Department of Interior, the Lemnel W. Timmons Estate and the Department of Interior; on the South by the lands of the Department of Interior and May V. and G. H. Matherson; on the West by the Department of Interior, and on the northwest by the lands of the Department of Interior and Mary Elizabeth Bates. This tract of land being bisected by Highway No. 620 in a general northerly-southerly direction, and more particularly described as follows:

> Beginning at a large poplar corner to Dr. Tripletts Division in the Wells Tract, running thence with said Triplett's line 1st North 74 degrees 10 East 150 poles to a marked red oak by a stake in said Triplett's line, corner to Dr. Spencer's division in Wells Tract, thence with said Spencer's line 2nd South 13 degrees 50 minutes East 154 poles to a stake supposed to be in Montgomery's line, thence 3rd South 65 degrees 30 minutes West 132 poles to a stake in a wood, thence 4th North 43 degrees West 143 poles to a large white oak in Bennett's line, thence 5th with Bennett's line North 27 degrees 15 minutes East 62 poles and 12 links to the beginning, containing 166 acres, more or less.
>
> Less and Except one and one-half acres conveyed by John F. Liming to Jacob Liming by deed dated August 24, 1901, and recorded in D. B. 52, page 71; (2) three and one-sixteenth acres conveyed by John F. Liming to John W. Liming by deed dated August 15, 1908, and recorded in Deed Book 57, page 417; (3) one acre conveyed by John F. Liming to Jno. F. Patterson by deed dated March 26, 1907 and recorded in D. B. 59, page 236; (4) Eighteen and one-fourth acre conveyed by W. W. Liming to John W. Liming by deed dated August 2, 1919 and recorded in D. B. 72, page 473.

COMMAND INSTALLATION
Chopawamsic Training Center

7 September 1945

Lessor: National Park Service

Location: Quantico, Virginia

Land purchased by War Dept. — $ 54,635
New Construction by War Dept. — 128,040

Item Number	Description	Estimated Construction Cost	Cost of Removal	Gross Salvage Value	Net Salvage Value	Restoration
1.	2 Magazines -- tile walls, wood roofs 24'x42' ea with approx 1500 lin ft of stockade fence and entrance road	$ 14,000	$ 2,750	$ 650	$-2,100	$ 100
2.	Camp A-2.					
	a. 25-man latrine with facilities, frame, conc floor, 15'x24' @ $4000	16,000	1,200	400	-800	400
	b. Pistol range bldg., frame, 40'x60'	2,000	600	100	-500	100
	c. Guard house, frame, 8'x8'	250	20	10	-10	---
3.	Camp A-5.					
	Boat house, frame, 16'x30'	500	150	50	-100	---
4.	Camp A-3.					
	25-man latrine with facilities, frame, conc floor, 15'x24'	4,000	300	100	-200	100
5.	Camp A-4.					
	a. Officers' Qrtrs, frame, 20'x100' (Inc sewage disposal field)	13,000	600	100	-500	300
	b. 100-man latrine with facilities, frame, conc floor, 30'x40'	10,000	500	100	-400	250
	c. Commissary Bldg, frame, 20'x40' + 20'x20', salvaged material	500	350	50	-300	50
	d. Storage bldg, frame 8'x8'	250	20	10	-10	---
	e. Guard house, frame, 8'x8'	250	20	10	-10	---
	f. Target rifle range -- 1500 cu yds grading and wood shelters	2,000	50	10	-40	1500
6.	Camp C-1.					
	a. Motor repair bldg, frame, conc floor, 30'x40'	4,500	500	50	-450	50
	b. Transmitter bldg, CCC portable type, 30'x30'	900	100	20	-80	10
	c. Storage bldg, plywood, 16'x16'	560	20	5	-15	---
	d. 25-man latrine with facilities, frame, conc floor, 15'x24'	4,000	300	100	-200	100
	e. Guard house, frame, 8'x8'	250	20	10	-10	---
7.	Camp C-4.					
	a. Officers' Qrtrs, frame	10,000	600	100	-500	300
	b. School and Recreation Bldg, frame, 20'x100' + 40'x100'	24,000	2,400	500	-1900	150

BLOCK 12 - SCHEDULE A
Form SPB-5 Report
Chopawamsic Recreational Demonstration Area
Prince William and Stafford Counties
Quantico, Virginia

Item Number	Description	Estimated Construction Cost	Cost of Removal	Gross Salvage Value	Net Salvage Value	Restoration
	c. Storage bldg, plywood, 16'x16', 3 ea @ $560	$ 1,680	$ 60	$ 15	$ -45	$ ---
	d. Quonset hutment, metal, 20'x60'	2,000	150	150	---	50
	e. Addition to existing mess hall, frame 20'x80'	3,000	200	50	-150	80
	f. 100-man latrine with facilities, frame, conc floor, 30'x40'	8,000	500	100	-400	250
	g. 6 Target rifle range, 100 cu yrds excavation and shelters	600	50	10	-40	100
	h. 8 Target pistol range, 1000 cu yds excavation and shelters	800	100	10	-90	1000
	i. 16'x16' wood tent platform and side walls, 25 @ $200 ea	5,000	500	125	-375	50
8.	Demolition Area.					
	a. 1 Acre area	---	---	---	---	50
	b. 4 Acre area	---	---	---	---	200
	c. 20 Acre area	---	---	---	---	1000
	TOTALS	$ 128,040	$12,060	$2,835	$-9,225	$6,190

Cost of Removal	12,060
Combined Cost of Removal and Restoration	18,250
Less Gross Salvage Value	2,835
	$15,415

Total funds required for removal and restoration $18,250.

Note: Government cost and contingencies are included in above figures.

APPENDIX C-4
Explosive Ordnance Incident Report
January 1993

EXPLOSIVE ORDNANCE INCIDENT REPORT

For use of this form, see FM 9-15; the proponent agency is US Army Training and Doctrine Command.

1. UNIT NUMBER	2. TROI NUMBER	3. UNUSUAL	4. ROUTINE
57-26-93		☐	☒

SECTION A: INITIAL INFORMATION

off post

5. DATE/TIME REPORTED	9. INCIDENT LOCATION	11. ITEM(S) REPORTED
311204JAN93	Prince William Forest Park Prince William, VA	Bazzooka round
6. REPORTED BY SGT Pressy		
7. PHONE NUMBER 703-806-3105	**10. POINT OF CONTACT** Ranger Pinkerd	
8. ADDRESS FBVA MP Station		

SECTION B: ACTION BY EOD

12. PERSONNEL DISPATCHED	13. DATE/TIME	14. TRAVEL DATA	15. WORK HOURS
SSG Schultz SGT Braddy	A. DPRT 311330JAN93 B. ARR 311445JAN93 C. COMPL 311630JAN93	A. AIR: FLYING TIME B. VEH: MILEAGE 40	A. TRAVEL 2 B. INCIDENT 4

16. CONFIRMED IDENTIFICATION	17 DISPOSITION
1 ea 2.36 Bazzooka round	BIP

18. INCIDENT NARRATIVE (INCLUDE ALL SIGNIFICANT DETAILS AND PROBLEMS)

Notify – DPTSEC/SDO (Name/Time) Depart _____ Return _____
Control " " Depart _____ Return _____

1. Lights and siren used: Yes ___ No X
2. Publicity: Yes ___ No X
3. Evac Requested: Yes X No ___
4. SIR: Yes ___ No X
5. Date destroyed: Same as 13 C
   By (Sign) _____
   Witness (Sign) _____
6. Explosives used: C-4 1; Caps 3; Fuse 23; M60 3

SECTION C: AUTHENTICATION

19. NAME AND GRADE AND SIGNATURE OF UNIT COMMANDER	20. TELEPHONE NO.	21. DATE
WALTER K. ANGLES, CPT, OD, Cdr	806-6006	1 Feb 93

DA FORM 3265-R, FEB 89 EDITION OF 1 AUG 70 IS OBSOLETE

APPENDIX D

HISTORICAL PHOTOGRAPHS

NOT TO SCALE

N

D-1

CHOPAWAMSIC TROOP TRAINING SITE
PRINCE WILLIAM COUNTY, VIRGINIA
DERP-FUDS* C03VA019401
1953 AERIAL PHOTO

PROJ. DATE: MAR. 1995	DATE OF PHOTO: 1953
30-MAR-1995 09:34	/N/OEW95AB/G4/PHOTO/CHOP53A.DGN,EXT

APPENDIX E

INTERVIEWS

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
for the former
CHOPAWAMSIC TROOP TRAINING SITE
Prince William County, Virginia
Project Number C03VA019402

APPENDIX E -- INTERVIEWS

Individual Contacted/Interviewed	Position/Organization
John W. Brunner, Ph.D.	Historian, Former OSS Agent 328 N. 26th Street Allentown, PA 18104-4924 (610) 434-0763
Hal Christensen	Former OSS Agent 4605 Twinbrook Drive Fairfax, VA 22032 (703) 323-6986
Michael B. Shaver	National Park Ranger, Prince William Forest Park Historian Cultural Resource Management Interpretation & Visitor Services P.O. Box 209 Triangle, VA 22172 (703) 221-7181

APPENDIX F

NEWSPAPERS/JOURNALS NOT USED

APPENDIX G

PRESENT SITE PHOTOGRAPHS

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
for the former
CHOPAWAMSIC TROOP TRAINING SITE
Prince William County, Virginia
Project Number C03VA019402

APPENDIX G -- PRESENT SITE PHOTOGRAPHS

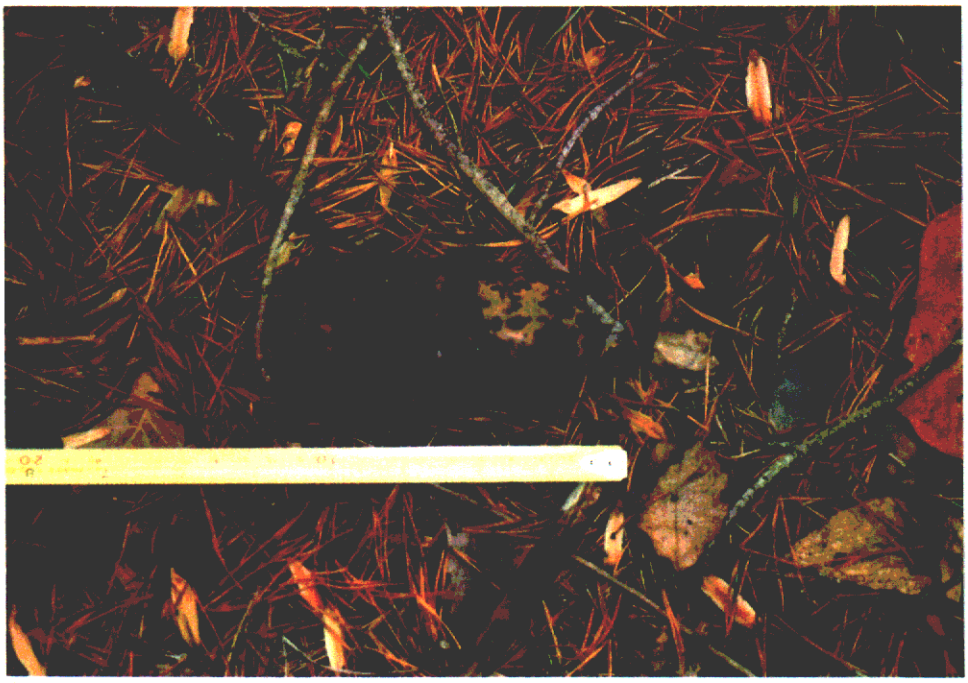
#1 2.36" rockets previously found on site.

#1 Steel I-Beam found in Demolition Area "D".

#1 Target posts on night firing course (Range "G"). Expended .50 caliber rounds found embedded in posts.

#4 Remaining magazine - typical of two (2) originally on site.

#5 Target gun removed (Range "B").
Family burial plot adjacent on the right (not shown).



#6 2.36" rocket warhead body.
Location on Range "B": N 30° 34' 57.1"
W 77° 25' 30.2"

#7 Target with 20 mm gun (Range "B").

APPENDIX H

HISTORICAL MAPS/DRAWINGS
NOT USED

APPENDIX I

RISK ASSESSMENT CODE PROCEDURE FORMS

18 Apr 94
Previous editions obsolete

RISK ASSESSMENT PROCEDURES FOR
ORDNANCE AND EXPLOSIVE WASTE (OEW) SITES

Site Name CHOPAWAMSIC RIFLE TRAINING SITE
Site Location PRINCE WILLIAM COUNTY, VA
DERP Project # C03VA019487
Date Completed MAR 95

Rater's Name DENNIS W. GILMORE
Phone No. 314 331 8108
Organization CELMS-PM-M
RAC Score 3

OEW RISK ASSESSMENT:

This risk assessment procedure was developed in accordance with MIL-STD 882C and AR 385-10. The RAC score will be used by CEHND to prioritize the remedial action at Formerly Used Defense Sites. The OEW risk assessment should be based upon best available information resulting from records searches, reports of Explosive Ordnance Disposal (EOD) detachment actions, and field observations, interviews, and measurements. This information is used to assess the risk involved based upon the potential OEW hazards identified at the site. The risk assessment is composed of two factors, hazard severity and hazard probability. Personnel involved in visits to potential OEW sites should view the CEHND videotape entitled "A Life Threatening Encounter: OEW."

Part I. Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel exposure to various types and quantities of unexploded ordnance items.

TYPE OF ORDNANCE
(Circle all values that apply)

A. Conventional Ordnance and Ammunition	VALUE
Medium/Large Caliber (20 mm and larger)	10
Bombs, Explosive	10
Grenades, Hand and Rifle, Explosive	(10)
Landmines, Explosive	10
Rockets, Guided Missiles, Explosive	10
Detonators, Blasting Caps, Fuzes, Boosters, Bursters	6
Bombs, Practice (w/spotting charges)	6
Grenades, Practice (w/spotting charges)	4
Landmines, Practice (w/spotting charges)	4
Small Arms (.22 cal - .50 cal)	1
Conventional Ordnance and Ammunition (Select the largest single value)	___

What evidence do you have regarding conventional OEW? See ASR

B. Pyrotechnics (For munitions not described above.)

	VALUE
Munition (Container) Containing White Phosphorus (WP) or other Pyrophoric Material (i.e., Spontaneously Flammable)	10
Munition Containing A Flame or Incendiary Material (i.e., Napalm, Triethylaluminum Metal Incendiaries)	(6)
Flares, Signals, Simulators, Screening Smokes (other than WP)	4
Pyrotechnics (Select the largest single value)	6

What evidence do you have regarding pyrotechnics? HISTORY OF DSS STATES USE OF INCENDIARY BOOBY-TRAPS

C. Bulk High Explosives (Not an integral part of conventional ordnance; uncontainerized.)

	VALUE
Primary or Initiating Explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, Tetracene, etc.)	10
Demolition Charges	10
Secondary Explosives (PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.)	8
Military Dynamite	6
Less Sensitive Explosives (Ammonium Nitrate, Explosive D, etc.)	3
High Explosives (Select the largest single value)	0

What evidence do you have regarding bulk explosives? _____

D. Bulk Propellants (Not an integral part of rockets, guided missiles, or other conventional ordnance; uncontainerized)

	VALUE
Solid or Liquid Propellants	6
Propellants	0

What evidence do you have regarding bulk propellants? _____

E. Chemical Warfare Materiel and Radiological Weapons

	VALUE
Toxic Chemical Agents (Choking, Nerve, Blood, Blister)	25
War Gas Identification Sets	20
Radiological	15
Riot Control Agents (Vomiting, Tear)	5

Chemical and Radiological (Select the largest single value) 0

What evidence do you have of chemical/radiological OEW? _____

_____

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TOTAL HAZARD SEVERITY VALUE 16
(Sum of Largest Values for A through E--Maximum of 61)
Apply this value to Table 1 to determine Hazard Severity Category.

TABLE 1

HAZARD SEVERITY*

Description	Category	Hazard Severity Value
CATASTROPHIC	I	21 and greater
CRITICAL	II	10 to 20
MARGINAL	III	5 to 9
NEGLIGIBLE	IV	1 to 4
**NONE		0

*** Apply Hazard Severity Category to Table 3.**

****If Hazard Severity Value is 0, you do not need to complete Part II. Proceed to Part III and use a RAC Score of 5 to determine your appropriate action.**

Part II. Hazard Probability. The probability that a hazard has been or will be created due to the presence and other rated factors of unexploded ordnance or explosive materials on a formerly used DOD site.

AREA, EXTENT, ACCESSIBILITY OF OEW HAZARD
(Circle all values that apply)

A. Locations of OEW Hazards

	VALUE
On the surface	(5)
Within Tanks, Pipes, Vessels or Other confined locations.	4
Inside walls, ceilings, or other parts of Buildings or Structures.	3
Subsurface	(2)

Location (Select the single largest value) 5

What evidence do you have regarding location of OEW? _____

B. Distance to nearest inhabited locations or structures likely to be at risk from OEW hazard (roads, parks, playgrounds, and buildings).

	VALUE
Less than 1250 feet	5
1250 feet to 0.5 miles	(4)
0.5 miles to 1.0 mile	3
1.0 mile to 2.0 miles	2
Over 2 miles	1

Distance (Select the single largest value) 4

What are the nearest inhabited structures? ROAD (STATE HIGHWAY)

C. Numbers of buildings within a 2 mile radius measured from the OEW hazard area, not the installation boundary.

	VALUE
26 and over	5
16 to 25	4
11 to 15	3
6 to 10	2
1 to 5	(1)
0	0

Number of Buildings (Select the single largest value) 1

Narrative MEASURED FROM AREA

D. Types of Buildings (within a 2 mile radius)

	VALUE
Educational, Child Care, Residential, Hospitals, Hotels, Commercial, Shopping Centers	(5)
Industrial, Warehouse, etc.	4
Agricultural, Forestry, etc.	3
Detention, Correctional	2
No Buildings	0

Types of Buildings (Select the largest single value) 5

Describe types of buildings in the area. WOOD FRAME DWELLING

E. Accessibility to site refers to access by humans to ordnance and explosive wastes. Use the following guidance:

BARRIER	VALUE
No barrier or security system	(5)
Barrier is incomplete (e.g., in disrepair or does not completely surround the site). Barrier is intended to deny egress from the site, as for a barbed wire fence for grazing.	4
A barrier, (any kind of fence in good repair) but no separate means to control entry. Barrier is intended to deny access to the site.	3
Security guard, but no barrier	2
Isolated site	1
A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility; or An artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates or other entrances to the facility (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the facility).	0

Accessibility (Select the single largest value) 5

Describe the site accessibility. _____

F. Site Dynamics - This deals with site conditions that are subject to change in the future, but may be stable at the present. Examples would be excessive soil erosion by beaches or streams, increasing land development that could reduce distances from the site to inhabitated areas or otherwise increase accessability.

	VALUE
Expected	5
None Anticipated	(0)

Site Dynamics (Select largest value) ~~0~~

Describe the site dynamics. _____

TOTAL HAZARD PROBABILITY VALUE 20
(Sum of Largest Values for A through F--Maximum of 30)
Apply this value to Hazard Probability Table 2 to determine Hazard Probability Level.

TABLE 2

HAZARD PROBABILITY

Description	Level	Hazard Probability Value
FREQUENT	A	27 or greater
PROBABLE	B	21 to 26
OCCASIONAL	C	15 to 20
REMOTE	D	8 to 14
IMPROBABLE	E	less than 8

* Apply Hazard Probability Level to Table 3.

Part III. Risk Assessment. The risk assessment value for this site is determined using the following Table 3. Enter with the results of the hazard probability and hazard severity values.

TABLE 3

Probability Level		FREQUENT A	PROBABLE B	OCCASIONAL C	REMOTE D	IMPROBABLE E
Severity Category:						
CATASTROPHIC	I	1	1	2	3	4
CRITICAL	II	1	2	3	4	5
MARGINAL	III	2	3	4	4	5
NEGLIGIBLE	IV	3	4	4	5	5

RISK ASSESSMENT CODE (RAC)

RAC 1 Expedite INPR, recommending further action by CEHND - Immediately call CEHND-ED-SY--commercial 205-955-4968 or DSN 645-4968.

RAC 2 High priority on completion of INPR - Recommend further action by CEHND.

RAC 3 Complete INPR - Recommend further action by CEHND.

RAC 4 Complete INPR - Recommend further action by CEHND.

RAC 5 Usually indicates that no further action (NOFA) is necessary. Submit NOFA and RAC to CEHND.

Part IV. Narrative. Summarize the documented evidence that supports this risk assessment. If no documented evidence was available, explain all the assumptions that you made.

SEE ASR

APPENDIX J

REPORT DISTRIBUTION LIST

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
for the former
CHOPAWAMSIC TROOP TRAINING SITE
Prince William County, Virginia
Project Number C03VA019402

APPENDIX J -- REPORT DISTRIBUTION LIST

Addressee	No. Copies
Commander, U.S. Army Engineer Division Huntsville, ATTN: CEHND-ED-SY-A P.O. Box 1600 Huntsville, Alabama 35807-4301	3
Commander, U.S. Army Chemical Materiel Destruction Agency ATTN: SFIL-NSM (Vern Skinner) Bldg E4585 Aberdeen Proving Ground, Maryland 21010-5401	1
Commander, U.S. Army Chemical & Biological Defense Command ATTN: AMSCB-CIH, Bldg E5183 Aberdeen Proving Ground, Maryland 21010-5323	1
U.S. Army Technical Center for Explosives Safety ATTN: SMCAC-ESM Savannah, IL 61074-9639	1
Commander, U.S. Army Engineer District, Norfolk ATTN: CENAO-PM 803 Front Street Norfolk, VA 23510-1096	1
CELMS-ED-G	1
CELMS-ED-H	1
CELMS-PD	1
CELMS-PM-M	1

APPENDIX K

ARCHIVE ADDRESSES

ORDNANCE AND EXPLOSIVE WASTE
CHEMICAL WARFARE MATERIALS
ARCHIVES SEARCH REPORT
for the former
CHOPAWAMSIC TROOP TRAINING SITE
Prince William County, Virginia
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APPENDIX K – ARCHIVE ADDRESSES

National Archives and Records Administration
Suitland Branch
4205 Suitland Road
Suitland, MD 20409

National Archives
8th and Pennsylvania
Washington, D.C. 20408

Archives II
8601 Adelphi Road
College Park, MD 20740-6001

Chemical and Biological Defense Agency Historical Office
ATTENTION: AMSCB-CIH
Aberdeen Proving Ground, Edgewood, MD 21010

National Personnel Records Center
9700 Page Blvd
St. Louis, MO 63132

U.S. Army Chemical School
Fisher Library, Sibert Hall
Ft. McClellan, AL 36205-5020

National Archives, Mid-Atlantic Region
9th & Market Streets
Philadelphia, PA 19107

Federal Records Center
5000 Wissahickon Ave
Philadelphia, PA 19144

Library of Virginia
11th Street at Capitol Square
Richmond, VA 23219-3491

Archives - Marine Corps Research Center
Quantico Corps University
Marine Corps Combat Development Command
2040 Broadway Street
Quantico, VA 22134-5107

Soil Conservation Service
9263 Corporate Circle
Manassas, VA 22110

Archives - Judicial Circuit Court
Prince William County Court House
9311 Lee Avenue
Manassas, VA 22110

Office of Mapping & Information Resources
Prince William County
4379 Ridgewood Center Drive, Suite 201
Prince William, VA 22192-5308

Office of Planning and Zoning
Prince William County
1 County Complex Court
Prince William, VA 22192-9201

Bull Run Regional Library
8051 Ashton Avenue
Manassas, VA 22110

Cultural Resource Management Interpretation & Visitor Center
Prince William Forest Park
P.O. Box 209
Triangle, VA 22172